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AUTHOR Clifford, Miriam; McKinney, James D.
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ABSTRACT

Evaluated in a 3-year project were the effects of three different classroom settings (a graded open classroom with a resource teacher, a multigrade open classroom emphasizing individualized instruction, and two self-contained special education classrooms) on achievement, self-concept, and classroom behavior of 30-38 educable mentally retarded children 8- to 13-years-old. Analysis of pre- and posttest measures of self-concept, achievement, attitudes, and classroom behavior did not demonstrate that one setting was clearly superior to another in producing meaningful gains in academics, self-concept, or attitudes toward schooling. Open classrooms promoted more peer interaction while the self-contained setting elicited more attending and teacher directed behavior. Teachers perceived Ss in open settings less favorably than Ss in self-contained classrooms. Associated with academic success were the learning characteristics of attention and independence. Task-oriented peer interaction, sociodrama, role playing techniques, and the use of media programs to assist instruction in alternative settings were found to be positive program components. Seven appendixes provide such information as a listing of topics covered during the sociodrama sessions and a list of media productions. (CL)

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Evaluation of Exemplary Programs for the Educable Retarded: ESEA Title III

Final Report for 1973-74 Budget Period

Miriam Clifford and James D. McKinney
Frank Porter Graham Child
Development Center
July, 1974
Chapel Hill, North Carolina

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Introduction

The problem of how best to integrate mildly retarded children into public education programs has concerned special and regular educators for decades. School programs for EMR children have typically stressed different goals and instructional procedures than those employed in the regular classroom. Increasing teacher effectiveness has been the focus of these efforts in the past. Some ways of doing this have included arranging children into homogeneous groups of various kinds, developing special curricula and materials, and establishing resource rooms or centers. The traditional delivery system for the education of children with IQs in the 50-80 range has been the self-contained classroom under the instruction of a special education teacher. Research on the efficacy of special class placement has been equivocal at best and has generated considerable debate concerning the effectiveness of this delivery system and the educational objectives for educable mentally retarded children (See McKinney & Clifford, 1972; Clifford & McKinney, 1972, 1973 for a more complete review of the literature). It has been suggested that regular class placement need not be detrimental to EMR children if the program can be modified appropriately for them (Bradfield, et al., 1973).

The entire issue of homogeneous versus heterogeneous grouping has received renewed emphasis recently, from philosophical, legal, ethical and human rights points of view (Esposito, 1973; Harvard, 1974). In addition to questions about the effectiveness of special class placement, a great deal of recent discussion has centered around the possible detrimental effects of labeling EMR children and the tendency to overassign minority group children to special classes (Jones, 1972; Mercer, 1971). The increasing numbers of open classrooms provide an additional organizational pattern in which placement of EMR children can be considered (Bartel, 1972; Bartel, Bartel, & Grill, 1972). This classroom structure, with its increased flexibility and opportunity for the individual child to participate in planning for himself and to work at his own rate and level much of the time, may make it possible for the EMR child to function adequately in the open classroom with normal peers.

At the present time, there is little systematic data about the effects of alternative delivery systems on the child's learning, behavior, or attitudes. The present project attempts to provide such information in order to aid in educational planning and program development for the EMR child.[1]

Objectives

The continuing objectives for the project are:

1. To evaluate the relative impact of three different exemplary programs on the achievement, classroom behavior patterns, and self-concepts of EMR students.

2. To test the effects of socio-drama and role playing techniques on EMR students' self-concept and attitudes toward their school experience.

3. To assess the effectiveness of specific instructional methods which may be developed during the course of the project.

Description of Settings and Activities. The three settings in which EMR students were studied were: (1) a graded, open environment with a resource teacher for the EMR students; (2) a multi-grade, open environment with a highly individualized program for the EMR and other students; and (3) two self-contained classrooms each with one specially trained teacher basically responsible for instruction.

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[1] A more complete review of the litreature and references will be found in McKinney & Clifford, 1972 and other project reports.

The project involved EMR students, 8-13 years of age, in three different classroom settings in the Chapel Hill-Carrboro Schools. At the Frank Porter Graham School during the first year of the project, twelve EMR students functioned in open classroom environments with approximately seventy children of the same age, receiving additional aid from a resource teacher. Nine EMR students, of whom six are new to the project, participated in that setting in the second year and four, none new to the project, were in it the third year.

Eleven students at Seawell School participated in a multi-grade open space organizational pattern with strong emphasis on individualized instruction the first year of the project. Six students continued in that settin during the second year, and six, of whom one was new to the project, continued at Seawell during the third year. At Carrboro Elementary School, eleven EMR students were housed in a self-contained classroom the first year. Nine remained in the group while two new children were added early in the year, making the total group studied at Carrboro eleven for the second year. Nine remained and one was added in the third year. An additional self-contained special education class at Estes Hills Elementary School with twelve students was added to the study population the second year. During the third year, this group retained five students and six new children were added. Table 1 presents the subjects in the study over its three year span. Both Carrboro and Estes Hills are staffed by a single teacher who is responsible for all instruction.

The total number of children in the study each year has been relatively stable over the three years. There have been only four white students among the EMR subjects, however, so the sample remains quite restricted in SES and race.

A socio-dramatist held weekly sessions in each setting utilizing group discussions, creative drama and group process evaluation. An

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TABLE I

Distribution of Subjects in the Study: 1971-1974

	FPG			Seawell			Carrboro			Estes Hills		
	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74
1	JH	JH	JH	LD	LD	LD	BB	BB	BB		TE	TE
2	CT	CT		KI	KI	KI	CC	CC	CC		LH	LH
3	SS	SS		QI	QI	QI	EG	EG	EG		XI	XI
4	XT			LO	LO	LO	TL	TL	TL		BT	BT
5	LC			BQ	BQ	BQ	QT	QT	QT		EU	EU
6	KT			MX	MX		SX	SX	SX		EB	
7	BK			NQ			XU	XU			MC	
8	MD			DI				CG	CG		QC	
9	KQ			NU				LG	LG		DC	
10	FC			HQ				DN	DN		LI	
11	HE					QQ	DD				HU	
12	OG						DG				UP	
13		UB	UB				EN					BF
14		UU	UU					SN				UF
15		UI	UI						LI			HG
16		NG										EG
17		SB										TT
18		NX										TC

--Note: Each subject is identified with distinctive initials. Thus, if the same initials appear more than once, they refer to the same child.

extensive description of these activities can be found in the supplementary report (McKinney and Tetel, 1971) and the final project report for 1971-1972 (McKinney and Clifford, 1972b). Media technicians were assigned to each setting during years one and two and to the central office during the final year to develop materials to supplement the instructional program for EMR students. Additional activities included consultation to the teachers concerning psychological and behavior problems encountered with EMR students and various alternative instructional methods that might be employed in a given case. In-service activities for the teachers and others on the project staff have provided basic information. These were included to contribute to the overall program development and teacher in-service efforts of the project.

Procedure

Since the specific objectives for the project predicted measurable change in a positive direction for each of three behavioral domains, a product evaluation utilizing a pre-post test design has been carried out within educational environments to assess change as a function of experience in each setting and of role playing techniques. In addition, the project has employed a process evaluation procedure in which observational techniques were used in order to measure patterns of child behavior and social interaction in the three educational environments and to draw inferences regarding how these patterns contribute to differences in improvement. A description of specific test instruments can be found in items 1-5 of Table 2.

In addition to the evaluations described above, which have been used throughout the study, continuing effort has been expended to improve the evaluation of the sociodrama and media programs. To this end, additional measures have been developed and used this year.

Those pertinent to the sociodrama program were administered to selected children in the sociodrama program at two of the settings in the study.

TABLE 2

Summary of Evaluation Instruments

Test	Variable	Description
1. Wechsler Intelligence Scale for Children (WISC).	General Intelligence	Classification instrument (standarized test).
2. Peabody Individual Achievement Test (PIAT) (Dunn and Markwardt, 1970).	Academic Achievement (grade equivalent scores).	Reading Recognition, Reading Comprehension, Mathematics, Spelling, and General Information (individually administered).
3. Structured Interview (SI) (McKinney and Clifford, 1971).	Student Attitudes and Self-Concept (rating scales).	Provides measures of general attitude toward school experience, self-esteem, expectancy for success, and expressiveness (individually administered structured interview).
4. Schedule for Classroom Activity Norms (SCAN)	Classroom Behavior Patterns (time sampling technique).	Classified ongoing classroom behavior into 27 categories which have been grouped according to: (1) Task Orientation - productive and non-productive (2) Social Orientation - independent and dependent, and (3) Affective Orientation - aggressive and considerate.
5. Schaefer Classroom Behavior Inventory (CBI) (Schaefer, Aaronson and Burgoon, 1965).	Classroom Behavior Patterns (rating scale for teachers).	Teachers rate the child's classroom behavior in the area of: (1) Task Orientation, (2) Social Orientation, and (3) Affective Orientation.
6. Self-Concept Questionnaire.	Self-Concept (sentence completion).	Measure of self-concept (individual administration).

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TABLE 2 (continued)

Test	Variable	Description
7. School Attitude Questionnaire.	Attitudes Toward School (sentence completion).	Measure of attitudes about school (individually administered).
8. Social Situation Questionnaire.	Problem Social Situations (individually administered).	Appropriateness and number of solutions for social situation problems.
9. Qualitative Sociodrama Rating Scale	Characteristics of child during sociodrama (Sociodramatist rating scale).	Measure of child's characteristics in the sociodrama situation as seen by the sociodramatist.
10. Sociodrama Behavior Schedule	Observations of behavior during sociodrama sessions (time sampling technique).	Classifies child's behavior in the sociodrama situation.
11. Classroom Behavior Schedule	Observations of behavior in the classroom (time sampling technique).	Classified sample of child behavior in the classroom: coordinated with the Sociodrama Behavior Schedule.
12. Media Questionnaire	Evaluation of media materials produced.	Rating by the classroom teacher of each media produced instructional material.

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At FPG School all EMR and four non-EMR children were tested while eight EMR children were selected randomly from the Estes Hills group.

Since the objectives of the sociodrama project are: (1) to increase self-esteem; (2) to improve attitudes towards school; (3) to increase appropriate classroom behavior; (4) to increase ability to generate alternative solutions to problem social situations; and (5) to increase appropriate motor and verbal activity, and the contribution of ideas during socio-drama sessions, the following additional instruments were developed and used initially in October. The two behavior observations were repeated in January and all instruments were repeated in May. The new measurement devices were a Self-Concept Questionnaire, a School Attitude Questionnaire, a Social Situation Questionnaire, a Sociodramatist Rating Scale, a Sociodrama Behavior Observation Schedule and a Classroom Behavior Observation Schedule. These instruments will be described in detail in a later section of this report and each will be found in Appendix A.

In the evaluation of the media program, the following steps were followed:

1. The level of skill in specific academic areas was assessed to determine some precise instructional needs for selected children.

2. The media specialists were apprised of the instructional goals for each child in each area.

3. A pre-test was developed and administered to determine the exact knowledge of each child in each area.

4. After instructional materials were developed and used, a post-test was administered to measure the amount of increase in the specific skill for which the materials were developed.

5. A rating scale was developed, to be distributed to classroom teachers, asking them to evaluate each media produced material used with their students. A copy of this form will be found in Appendix A.

The following additional data were obtained:

1. Achievement data was gathered on the EMR students formerly in the project who were promoted into junior high school.

2. An attempt was made to obtain data about the attitudes of the parents of the EMR students through the use of a short, informal questionnaire.

The specific steps of the evaluation were as follows:

A. Screening (Sept. 1 - Oct. 1)
    1. A form was completed for each new S providing relevant background data and previous achievement and IQ test scores.
    2. WISC IQ scores were obtained for all new children who were identified as candidates for the project.
    3. The results of the screening procedure were communicated to the principals involved and final class assignments were made subject to parent conferences.

B. Pre-test Battery (Sept. 20 - Nov. 1)
    1. Peabody Individual Achievement Test (PIAT)
    2. Structured Interview for students new to the project.
    3. Schaefer Classroom Behavior Inventory (CBI)
    4. Parent Questionnaire
    5. Sociodrama observations and rating scales for the selected students

C. Role Playing (Socio-drama) began Oct. 4.

D. Process Measure (Dec. 1-Jan. 30)
    1. Schedule for Classroom Activity Norms (SCAN)
    2. Sociodrama Observations

E. Post-test Battery (April 15-May)
    1. PIAT
    2. Structured Interview for all subjects.

3. CBI

4. Sociodrama observations and rating scales.

Results for 1973-74

Data Analysis

Mean IQ scores and chronological ages of subjects new to the study in Fall, 1973 were compared to those of subjects who were in the study the previous Fall (1972) by analysis of variance. One-way analyses of variance were then performed on scores for each pre-test variable to test for differences in initial level among subjects in the four schools. Scores were not examined for sex differences as none were found in past years.

Differences between pre- and post-test scores within each EMR group were compared by *t*-tests for related samples for scores on the appropriate variables. Post-test scores were tested for group differences by analysis of covariance with the pre-test scores on each variable covaried on the related post-test score. Also, correlation coefficient matrixes were computed among all spring variable scores.

Subject Characteristics

Results. Comparisons of age and IQ were made among students in the program each project year. The mean ages of subjects in the study were 11.39 years (*N*=32) in the fall of 1971, 11.27 years (*N*=38) in the fall of 1972 and 11.55 years (*N*=32) in the fall of 1973. The mean IQ was 65.03 the first year, 65.82 (*N*=36) the second year, and 65.34 (*N*=31) this year. The EMR students in the study have been highly comparable during the three years with regard to relevant subject characteristics.

One-way analysis of variance was used to determine differences in IQ and CA among EMR subjects in the four schools this year. No significant differences were found among students in the four schools for these variables. Table 3 presents the average ages and IQ scores for children in the study from each school during the current year.

Table 3

Mean Age and IQ by School: 1973-74

	FPG (N=4)	Seawell (N=6)	Carrboro (N=10)	Estes Hills (N=10)	*F*-Ratio
Age[a]	12.12	11.52	11.36	11.24	0.50
Full IQ	70.75	68.33	63.10	64.50	0.77

a. As of September 1, 1973.

Discussion. Subjects in the three settings during all three years of the project were within the age and general intelligence range of the project and were well matched with respect to these variables. Students participating in the project during its third year were similar in these variables to the original subjects. EMR children who participated during the third year of the study remained well matched with respect to IQ and CA.

Academic Achievement

Results. Subjects in the four schools this year differed significantly in their pre-test mean grade equivalent scores for reading recognition ($p < .05$), reading comprehension ($p < .05$), information ($p < .01$), and total scores ($p < .01$). The initial level of total achievement for the entire group was at a mean grade equivalent level of 2.31 years.

Mean scores for pre- and post-test PIAT may be found in Table 4. Significant changes in achievement mean scores from fall to spring were found in three of the four schools. There were no significant changes in any area of achievement at FPG this year. Seawell students improved an average of .85 years in reading recognition ($p < .05$) and .59 years in reading comprehension ($p < .05$), with a total mean gain of .45 years ($p < .01$). Carrboro children gained .26 years in reading comprehension ($p < .01$), .41 years in spelling ($p < .05$), and .31 years in total achievement. Estes Hills gained .36 years in reading recognition ($p < .01$), .41 years in reading comprehension ($p < .01$), .26 years in information ($p < .05$), and .22 years in total achievement.

The post-test scores among the schools were significantly different in mathematics, information and total scores. In each case students at FPG School were significantly higher than were those at the other three schools. (Newman-Keuls tests $p < .01$ except for mathematics where FPG students were higher than Carrboro and Seawell students with significance of .05).

Table 4

Mean Pre- and Post-Test PIAT Scores; Fall, 1973-Spring, 1974

	FPG (N=4)	Seawell (N=6)	Carrboro (N=10)	Estes Hills (N=10)	*F*-Ratio
Mathematics					
Pre-test	4.17	2.46	2.46	2.46	2.90
Post-test	4.42	2.36	2.50	2.63	3.56*
t	-1.07	0.61	-0.21	-0.63	
Reading Recognition					
Pre-test	3.22	1.78	2.06	2.21	3.56*
Post-test	3.17	2.63	2.40	2.57	1.80
t	0.32	-2.83*	-1.34	-2.82**	
Reading Comprehension					
Pre-test	3.02	2.36	2.23	2.41	4.60*
Post-test	2.77	2.95	2.49	2.82	.93
t	1.14	-2.17*	-2.85**	-2.83**	
Spelling					
Pre-test	2.50	1.85	2.29	2.31	0.70
Post-test	3.22	2.40	2.70	2.45	1.13
t	-1.86	-2.05	-1.96*	-1.25	
Information					
Pre-test	5.37	1.88	2.00	2.49	8.74**
Post-test	5.10	2.33	2.19	2.75	5.48**
t	0.54	-1.46	-0.57	-2.68*	
Total					
Pre-test	3.57	1.95	2.02	2.32	6.52**
Post-test	3.65	2.40	2.33	2.54	4.86**
t	-0.33	-3.43**	-2.18*	-2.13*	

* $p < .05$
** $p < .01$

Table 5

PIAT Mean Scores for Spring 1974 Adjusted by ANCOVA for Fall, 1973 PIAT Scores

	FPG (N=4)	Seawell (N=6)	Carrboro (N=10)	Estes Hills (N=10)	_F_-Ratio
Mathematics	2.92	2.59	2.73	2.86	0.29
Reading Recognition	2.04	3.10	2.40	2.57	3.87*
Reading Comprehension	2.11	3.01	2.70	2.83	3.54*
Spelling	2.92	2.84	2.63	2.36	.76
Information	2.25	3.05	2.79	2.85	1.00
Total	2.28	2.79	2.64	2.53	1.58

Note: _F_-ratio reported is for mean differences among schools.

* $p < .05$.

Since FPG students were generally higher than others at the time of the pre-test, each pre-test PIAT score was used as a covariate for the post-test score. The adjusted mean scores will be found in Table 5. When scores are adjusted for their level in the fall, children in the four schools were significantly different in reading recognition and reading comprehension ($\underline{p} < .05$), with Seawell children highest and Estes Hills children next, followed by students at Carrboro and FPG in that order.

In the previous two years the only significant difference in adjusted mean scores, where fall pre-test scores were covaried on spring post-test scores, was found for total achievement scores in 1972-73 ($\underline{p} < .01$). These data were reanalyzed because an error was discovered in previously reported analyses. Tables presenting the reanalyzed data will be found in Appendix B.

Correlation coefficients were computed between fall and spring PIAT scores for each year to gain an estimate of the reliability of the measure. These will be found in Table 6. All were above .70 with the exception of the reading comprehension scores during the current year.

Discussion. PIAT pre-test scores showed a greater number of differences among the schools this year than had been present previous years. Students at FPG School were generally superior to those in the other schools in initial achievement. Children in the other three schools, however, gained significantly in reading comprehension and in total achievement as well as one other area in each school. FPG students, however, failed to gain significantly in any area this year.

Actual amount of gain remains small. Most areas for which significantly improved scores were found show mean gains of from .22 to

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Table 6

Correlation of Fall and Spring PIAT Scores: EMR Students

	1971-72 (N=32)	1972-73 (N=38)	1973-74 (N=31)
Mathematics	.91	.74	.86
Reading Recognition	.90	.88	.75
Reading Comprehension	.86	.73	.55
Spelling	.90	.86	.70
Information	.73	.84	.87
Total	.95	.94	.87

.45 years. The only areas with more gain than that were for Seawell children in reading recognition and reading comprehension.

There were still differences reflected in the post-test scores even when they had been adjusted for their initial fall differences in the two reading areas. The greatest differences were between the two open classrooms with the self-contained settings falling in intermediate positions. The highest adjusted mean scores were obtained by those children in the open setting with no resource teacher available.

Student Self-Concept and Attitudes.

Results. The Structured Interview was administered in the fall only to the children who entered the project at that time (as was done last year). The data from this administration were combined with the initial interview for children from the preceeding years. Analysis indicated that there were no significant differences among EMR students in the four schools in initial self-esteem, expressiveness, or expectancy for success. Significant differences among the schools existed, however, in the new students' opinion of their school experience ($p < .01$) with students at Estes Hills evaluating it most favorably and those at FPG evaluating it least favorably.

The entire group of subjects were administered the Interview during the spring testing. As Table 7 indicates, there was a significant difference among schools for self-esteem ($p < .01$) with FPG students highest and Carrboro students lowest.

Discussion. There continues to be little difference among schools on the Interview Scales. The schools were significantly different in their self-esteem mean scores with FPG students rating themselves most favorably, while Carrboro students felt least favorably about themselves.

Table 7

Mean Structured Interview Scores for Spring, 1974

	FPG (N=4)	Seawell (N=6)	Carrboro (N=10)	Estes Hills (N=10)	F-Ratio
School Experience	61.00	63.83	59.60	70.70	2.36
Expectation for Success	75.50	86.33	73.90	81.00	1.19
Self-Esteem	53.75	43.83	33.00	40.50	4.44*
Expressiveness	21.75	23.50	23.70	26.40	1.72

*$p < .05$

Since there were virtually no students new to the project this year from the open settings no attempt was made to evaluate change in Interview scale scores for the current year. Change data will, however, be evaluated for the longitudinal and combined samples.

Clinical impressions continue to suggest considerable difference among individual children in how they responded to the interview. Some gave the interviewer careful evaluations of their school situations and teachers in quite a thoughtful, reflective way. These children, who were usually older, seemed to feel they were able to think about questions and arrive at their own opinions. They seemed more able to evaluate their environment rather than assuming that it was as it should be and that they were inadequate. Other children appeared to be attempting to please the interviewer by telling her what they assumed she, as a representative of the school, wanted to hear--i.e., favorable things about teachers and schools. Still others gave the impression of having internalized the school's values, responding that their experiences with school and teachers were good and satisfying in an unquestioning, almost automatic way. More of the children seemed impatient and disinterested in the interview this year, although only one or two students completely refused to participate. These students were from the open classroom without a resource teacher and were, in addition, markedly hostile individuals from families known by school personnel to be difficult.

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Parent Attitudes

An attempt was again made to obtain data from parents of the children in the study. A simple rating scale was devised for this purpose (Appendix B). Copies were distributed to all teachers with the request that they obtain responses from the parents of study children at the scheduled parent-teacher conferences.

Results. Only nine questionnaires were returned, all of which came from the two self-contained classroom teachers. It was reported that other parents failed to come to the conference, had no time to respond, or did not wish to do so. Those parents that did fill out the questionnaire gave basically favorable replies. Only one parent felt that his child was not making progress in his classroom and only one felt that there were no positive differences in their child's home behavior.

Areas listed as showing improvement included various academic subjects and general maturity. Those listed as needing improvement focused on independence and human relationship areas.

Discussion. Data about parent opinions or attitudes continued to be virtually impossible to obtain. No effective contact with parents was made at any time during the project. The questionnaire used this year was not effective as a measurement device, as no variability in response was obtained.

Classroom Teacher Ratings.

Teachers again filled out the CBI for each student in fall and spring. Mean pre- and post-test scores are found in Table 8. Pre- and post-test data for each scale were examined for differences among the four schools with one-way analyses of variance. The pre-test and post-test average scores for each group were then tested for amount of change using t-tests for related comparisons.

Table 8

Mean Pre- and Post-Test Classroom Behavior Inventory Scores: Fall, 1973-Spring, 1974

	FPG (N=4)	Seawell (N=6)	Carrboro (N=10)	Estes Hills (N=10)	_F_-Ra
Task Orientation					
Pre-test	6.50	7.33	8.60	11.50	8.87
Post-test	7.25	6.83	9.40	10.40	4.50
_t_	-0.50	0.54	-1.92*	1.67	
Distractibility					
Pre-test	8.25	10.00	7.30	5.60	4.59
Post-test	10.50	10.00	6.60	7.60	3.05
_t_	-1.80	0.00	1.41	-2.26*	
Considerateness					
Pre-test	8.50	8.33	10.20	10.20	2.24
Post-test	10.00	7.50	9.90	9.10	2.65
_t_	-2.32	1.38	1.15	2.70*	
Hostility					
Pre-test	6.00	7.50	6.20	6.20	0.38
Post-test	5.50	8.66	6.50	8.40	1.77
_t_	1.00	-1.94	-0.60	-2.96**	
Extroversion					
Pre-test	8.25	6.83	9.70	7.90	3.4
Post-test	8.25	8.16	10.10	7.90	1.6
_t_	0.00	-1.66	-0.80	0.00	
Introversion					
Pre-test	7.75	6.83	5.90	6.60	1.1
Post-test	7.75	6.00	4.90	6.00	1.0
_t_	0.00	0.77	1.93*	0.67	

*$p < .05$.
**$p < .01$.

Results. On the pre-test children in the self-contained classroom at Estes Hills were again rated as more task-oriented and less distractible than were children in the other settings. Children in the open settings were less task-oriented than those in self-contained classrooms. There were significant differences among the schools in ratings of extroversion with Carrboro students rated as most extroverted, FPG students next highest, then Estes Hills and Seawell children, in that order. There were no significant differences among schools in introversion, consideration or hostility.

There were no differences from fall to spring on any dimension in ratings of children at FPG or Seawell. At Carrboro, students were felt to be more task oriented and less introverted in the spring than in fall, while Estes Hills children were rated as more distractible, and hostile and as less considerate in the spring than they had been in the fall.

Differences among the schools at the spring post-test were again found for task orientation and distractibility. Relative ratings among the schools for task orientation were not different from what they were in the fall. Distractibility ratings for students in the self-contained classrooms were lower than those for students from the open classrooms as they were in the fall. Extroversion ratings were no longer significantly different.

Discussion. Major dimensions of difference for the CBI ratings for these EMR children were task orientation and distractibility. Extroversion has also differed but less consistently. There were no differences between pre- and post-test ratings on any dimension for children in open classroom settings, while ratings for children in both self-contained classroom settings changed on various dimensions. Children in the four settings were rated as being more like each other this spring than they had been in the fall. Last year children in the four settings were also rated as more similar in spri than in the fall. Differences in teacher ratings have been found each year between students in open settings and those in self-contained settings with teachers in open classrooms rating their EMR children as less task-oriented and more distractible than teachers in self-contained classrooms.

At least part of the reason for this finding may lie in the fact that ratings of another's behavior, such as those required by the CBI, are made on the basis of the existing frame of reference of the rater at the time the ratings are made. Previous experiences build an internal framework of expectancies, attitudes, and concepts on the basis of which new judgements are made. It is probable that more recent experiences have a stronger influence on new judgements than earlier ones. Thus, each person asked to make ratings does so on the basis of what he currently observes in the behavior of the individual being judged and the anchor point provided by his past experiences.

From this perspective, the open classroom teachers have a base of experience with normal children present in their current situations which provides an anchoring point of wider breadth than that provided the special education teachers. Teachers in self-contained EMR classes have only a narrow range of child behavior available in their recent past from which to base judgements of their present students. This permits their ratings to be more influenced by their general beliefs and attitudes in reference to their students and makes it more difficult for them to modify their ratings by checking the actual behavior of a wide range of different children.

Classroom Behavior

SCAN categories from observations of 90 second grade subjects (McKinney, Mason, Perkerson & Clifford, 1974) were factor analyzed. All SCAN d from this project have been analyzed or re-analyzed in terms of the resulting twelve empirical categories. After being transformed into a proportion each category was treated with analyses of variance by school to examine differences among school mean scores. Data from the first two project years will be found in Appendix C. Table 9 presents data from the current year.

Results. Analysis of variance of the proportion of behavior in each SCAN dimension shows significant differences in three of the twelve categories. Students at FPG showed the lowest frequency of attending behavior while those at Estes Hills showed the highest frequency of attending. There was a higher frequency of task oriented conversation at Carrboro and more social interaction at Seawell and FPG than at the other schools. Although it was not possible to perform the formal statistical analysis for six categories because there were no occurances of the particular behaviors at one or more schools, inspection suggests that Seawell students were involved in more constructive play than others, less non-constructive self-directed behavior was seen at FPG and Carrboro, and the least dependent behavior was observed in FPG and Seawell students.

Discussion. Each year of the study children in the self-contained classrooms were observed spending a larger proportion of their time paying attention than those in the open settings. Social interaction, on the other hand, has been consistently higher among children in the open settings. These interactions were with non-EMR children 95 percent of the time at FPG and 68 percent of the time at Seawell. Thus, assignment to an open classroom setting does result in social contact and

Table 9

Mean Proportions of Total Observations for SCAN Dimensions: 1973-74

	Mean Proportions				
	FPG (N=4)	Seawell (N=6)	Carrboro (N=9)	Estes Hills (N=10)	_F_-Rati
Constructive Self-Directed Activity	35.4	15.1	28.6	22.0	2.02
Attention/Participation	17.5	22.6	31.1	48.3	3.11
Constructive Play	0.0	15.6	0.9	0.3	
Task-Oriented Conversation	1.4	0.1	3.0	0.7	2.90
Non-Constructive Self-Directed Activity	0.0	4.4	0.9	4.4	
Distractibility	12.2	7.5	9.9	6.8	1.15
Passive Waiting	11.2	10.8	3.3	4.4	1.84
Gross Motor Activity	6.6	8.8	8.5	6.4	0.54
Social Interaction	12.2	12.0	5.2	2.5	5.20
Dependency	0.0	1.8	6.2	3.5	
Aggression	0.0	0.1	2.7	0.0	
Teacher Interaction	0.0	0.5	1.6	0.5	

*$p < .05$.

**$p < .01$.

interaction between EMR and non-EMR children. Behavior in the other categories has been more variable from year to year.

This year there appeared to be more dependent and aggressive behavior among Carrboro students than was seen in the other schools or than had been observed among Carrboro children in previous years. Constructive play was prominent among Seawell students which may reflect the individualized program in effect there.

Classroom Settings

Data was collected for each SCAN observation period for teacher-direction or individual activity and the number of children involved in the on-going activity.

Results. The teacher was directly present in the activity of the observed child 31 percent of the time at FPG and 46 percent of the time at Seawell. At Carrboro, she was directing the activity 56 percent of the time, while at Estes Hills, she was involved in the activity 75 percent of the time.

Students at FPG were observed to spend a large proportion of their time in individual activities (see Table 10). The remainder of their time was spent in activity with large groups or the entire class. At Seawell, individual and small group activity predominated. The pattern at Carrboro showed half the observation time being spent with the entire class and most of the remainder in individual activity, while students at Estes Hills spent a large proportion of their time in small group activities with very little time spent in larger groups.

Discussion. Children in the open classrooms more often worked independently of their teacher than did those in the self-contained classes. They also interacted more with their peers than did the children in the self-contained classrooms. Many of these interactions were with non-EMR children. This opportunity was not available for the EMR children in

Table 10

Setting Data for EMR Subjects: 1973-74

	FPG		Seawell		Carrboro		Estes Hills	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
One Child	11	69	12	50	13	36	8	20.0
Small Group (≤ 6)	0	0	9	38	5	14	29	72.5
Large Group (≥ 7)	2	12	0	0	0	0	0	0
Entire Class	3	19	3	12	18	50	3	7.5

the self-contained classrooms who were largely, if not entirely, restricted to interactions among themselves. The nature of the work done independently of the teacher seemed to differ in one self-contained classroom, where all children were often assigned the same work, and in the other and at FPG and Seawell, where it seemed more highly individualized.

FPG students differed from those at Seawell in that they were seen in fewer small group situations and in more settings involving large groups or the entire class. One self-contained classroom appeared to involve the children in either total group instruction with the teacher or in individual seat work. The other self-contained classroom presented settings which involved largely small groups or individual work.

FPG and Seawell students spent a larger proportion of time in individual work this year, but Seawell students were observed in somewhat less constructive self-directed activity than were FPG students. Among Seawell students, the proportion of self-directed activity appears considerably lower this year than last.

The major dimensions which seem to separate open classrooms and self-contained units continue for the third year to be the degree of structure and supervision provided for student activities and teacher expectations for performance. Similarly, qualitative differences in behavior between the two open classrooms seem to be due to relative differences on these two dimensions.

The available evidence continues to support the conclusion that quite subtle changes in the classroom environment produce corresponding and predictable changes in student behavior. These findings suggest that intervention aimed at altering classroom process may be an effective means for facilitating greater productivity in the open environment.

Correlational Data

Data from the spring of 1974 and SCAN data from 1974 were correlated and are presented in Table 11. Similar data from the first two years of the study using the empirical SCAN categories will be found in Appendix C.

Results. Full scale WISC scores correlated significantly only with PIAT Math, Information, and Total Scores. Age correlated significantly with PIAT Information score, amount of interaction with teacher, and positive evaluations of school experience.

Several PIAT subtest scores were significantly intercorrelated. The total PIAT score correlated significantly with all subtest scores ($p < .01$).

Dependent behavior was significantly related to low reading recognition and total PIAT scores, and to greater amounts of aggression and teacher interaction. The frequency of social interaction was negatively related to dependent behavior. Children who showed high frequencies of attending also displayed less distractibility and passivity and more constructive self-directed behavior and social interaction.

High self-esteem was associated with higher achievement, more frequent social interaction, and a higher expectation of success. Higher expressiveness and expectation of success correlated with positive evaluation of school experience. High expectation of success was also associated with less frequency of self-directed constructive behavior and gross motor activity.

The expected high negative correlations were found between the polar CBI dimensions--task orientation and distractibility, extroversion and introversion, and considerateness and hostility. In addition, considerateness was associated with high task orientation and low distractibility and hostility was associated with high distractibility and low considerateness.

Table 11

Correlations Among Variables for Spring, 1

		PIAT						SCAN									
	Age	Math	Rdg. Rec.	Rdg. Comp	Spg.	Inf.	Total	1	2	3	4	5	6	7	8	9	10
WISC IQ	07	63**	12	11	18	48*	49**	-30	-04	-04	27	36	18	-28	-24	18	02
Age		29	09	17	13	46*	37	17	-11	-14	32	10	10	01	-13	29	-36
PIAT																	
Mathematics			44*	31	40*	52**	79**	09	-13	-14	37	02	08	35	-32	22	-29
Reading Recognition				65**	68**	36	74**	21	-04	23	-00	02	-25	12	-20	-04	-40*
Reading Comprehension					45*	21	57**	29	-09	23	05	18	-07	00	-35	-14	-31
Spelling						35	71**	18	-08	04	27	-06	-11	-04	-28	-03	-26
Information							76**	-05	01	-03	21	01	17	-06	-09	25	-29
Total								15	-06	-00	28	01	06	08	-34	16	-40*
SCAN																	
Constructive Self-Direction									-55*	-28	01	-25	20	-04	10	-01	-02
Attention										-18	-13	-01	-49**	-47*	-44	-57**	01
Constructive Play											-08	07	-32	14	19	37	-34
Task Oriented Conversation												-10	22	-16	-03	13	07
Non-Constructive Self-Direction													-23	10	-15	10	-04
Distractibility														22	13	20	33
Passive Waiting															08	28	-19
Gross Motor																25	06
Social Interaction																	-44*
Dependency																	
Aggression																	
Teacher Interaction																	
Interview																	
School Experience																	
Self-Esteem																	
Expressiveness																	
Expectancy for Success																	
CBI																	
Task Orientation																	
Distractibility																	
Extroversion																	
Introversion																	
Considerateness																	

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*$p < .05$.

**$p < .01$.

Table 11

nong Variables for Spring, 1974 Data

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SCAN							Interview					CBI				
6	7	8	9	10	11	12	Sch. Exp.	Self Est.	Expr.	Exp. Suc.	T.O.	Dist.	Exro.	Intro.	Con.	Host
18	-28	-24	18	02	06	-26	11	21	13	32	-17	24	15	-15	-23	26
10	01	-13	29	-36	-28	-42*	-39*	03	-21	03	-08	-09	-04	05	00	03
08	35	-32	22	-29	-02	-38*	-09	36	03	07	-11	10	-04	03	11	-20
25	12	-20	-04	-40*	06	-32	27	41*	03	16	08	-04	11	02	20	-22
07	00	-35	-14	-31	-06	-35	12	23	-00	05	16	-08	-06	23	13	-20
11	-04	-28	-03	-26	09	-22	17	31	11	18	21	-14	34	-17	28	-29
17	-06	-09	25	-29	-19	-63**	07	44*	19	25	-05	31	16	03	-17	21
06	08	-34	16	-40*	-02	-54**	06	51**	03	19	01	09	10	07	12	-14
20	-04	10	-01	-02	01	07	-35	-02	-30	-43*	06	-05	-10	35	38*	-47*
49**	-47*	-44	-57**	01	04	-14	29	-15	27	31	33	-25	07	-17	-00	14
32	14	19	37	-34	-11	-05	07	21	02	36	-25	12	04	-13	-18	12
22	-16	-03	13	07	01	20	03	08	18	01	23	-27	21	-17	16	-01
23	10	-15	10	-04	-05	-11	09	20	24	23	-16	19	14	-26	-33	50**
	22	13	20	33	-02	-04	-12	-11	-14	-36	-06	16	-00	15	-06	-08
		08	28	-19	-14	-06	-07	-04	-21	-08	-38	19	-29	08	-00	-16
			25	06	-05	22	-16	-15	-04	-39*	04	03	08	02	-07	10
				-44*	-25	-11	-26	45*	-20	18	-52**	38*	-11	09	-18	16
					52**	41*	09	-32	13	-24	07	02	28	-21	-30	20
						45*	00	07	-26	07	00	-09	09	-07	-05	05
							08	-20	-16	-19	03	-18	-01	03	23	-14
								29	61**	39*	44*	-10	16	-20	00	21
									19	42*	-10	23	-01	02	-07	18
										34	42*	-00	41*	-45*	-19	29
											-08	11	17	-34	-33	42*
												-75**	24	-15	54**	-17
													-17	24	-64**	43*
														-74**	-10	08
															17	-12
																-67*

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Low hostility and high considerateness ratings correlated with more self-directed constructive behavior. The frequency of social interaction was associated with low ratings in task orientation and high ratings in distractibility.

Discussion. Both age and higher IQ were related to achievement variables. Only two other variables related significantly to age and none related to IQ. Older EMR children felt more unfavorable about their school experience and they interacted less frequently with their teachers. This may be due to an increased interest and ability to determine their own opinions and to control their behavior in regard to teacher interaction.

Children who interacted less frequently with their peers were more dependent, and had lower self esteem. Those who paid attention in class more frequently were involved in less distractible and passive waiting behavior but were also involved in less social interaction and less self-directed constructive activity.

Generally, dependency, high levels of teacher interaction and low self esteem seem linked to lower levels of achievement. Considerate children showed a higher frequency of self-directed constructive behavior and lower frequencies of non-constructive, self-directed behavior. Less task-oriented and more distractible children emitted more gross motor behavior. Those children with low self-esteem were also more passive, and children who felt they were expressive, expected to be successful and evaluated their school experience favorably.

Longitudinal Data

In order to assess longitudinal trends, mean scores for subjects in the study from Fall, 1972 to Spring, 1974 were compared across the four measurements, i.e., Fall, 1972, Spring, 1973, Fall, 1973, and Spring, 1974. School by time (4 x 4) repeat measure analyses of variance were performed for the continuing children in FPG (N=4), Seawell (N = 5), Carrboro (N = 9) and Estes Hills (N = 5) schools for scores on the PIAT and the CBI. The

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three available scores (Fall, 1972, Spring, 1973 and Spring, 1974) for the Structured Interview were also treated by a school by time (4 x 3) repeat measure analysis of variance. SCAN dimensions for 1972-73 and 1973-74 were examined using related _t_-tests.

Subject Characteristics

As can be seen in Table 12, there were no significant differences in IQ or age among children in the four schools who were in the study between Fall, 1972 and Spring, 1974.

Academic Achievement.

Two-way analyses of variance for repeat measures were used to examine PIAT scores for the four times the test was administered between Fall, 1972 and Spring, 1974 in the four schools (4 times x 4 schools) as shown in Table 13. In addition, analysis of covariance was used to covary each pre-test (from Fall, 1972 testing) on the relevant post-test from each of the three later testings.

Results. Analysis of mean scores in mathematics shows that there were significant differences among the four schools and across time. Students at FPG scored higher initially than those at the other schools and remained at higher levels throughout the time. Mean scores increased over time in all schools. When the scores from the Fall, 1972 testing were used as covariate for the later scores there were significant differences among schools in Spring, 1973, with Estes Hills students lower than others. No significant differences were found among the schools in Fall, 1973 or Spring, 1974 (see Figur

Reading recognition scores also showed significant differences among schools and across time. FPG students attained higher scores at all testings and all increased significantly over time. When the pre-test was covaried on the post-tests, however, there were no significant differences among schools (see Figure 2).

Table 12

Mean CA and IQ for Ss in Study 1972-74 (Longitudinal Sample)

	FPG (N=4)	Seawell (N=5)	Carrboro (N=9)	Estes Hills (N=5)	F-Ratio
IQ	69.50	67.60	64.11	62.20	0.77
CA[a]	11.16	10.86	10.61	10.36	0.33

[a] CA on Sept. 1, 1972.

Table 13

Mean PIAT Scores (Longitudinal Sample)

	Mean Scores				F-Ratios		
	FPG (N=4)	Seawell (N=5)	Carrboro (N=9)	Estes Hills (N=5)	School	Time	Sch x T
Math							
Fall '72	2.97	1.90	1.72	1.96			
Spring '73	3.65	2.40	2.21	1.52			
Fall '73	4.17	2.70	2.44	2.40			
Spring '74	4.42	2.66	2.55	2.32	4.07*	13.92**	1.
Reading Recognition							
Fall '72	2.67	1.74	1.82	1.46			
Spring '73	3.20	1.90	1.92	1.74			
Fall '73	3.22	1.88	2.12	2.02			
Spring '74	3.17	2.50	2.28	2.30	3.93*	10.07**	.
Reading Comprehension							
Fall '72	3.27	2.12	2.15	2.16			
Spring '73	2.77	2.32	2.27	1.92			
Fall '73	3.02	2.44	2.24	2.26			
Spring '74	2.77	3.06	2.55	2.62	2.91	4.11*	2.
Spelling							
Fall '72	2.75	1.60	1.67	1.66			
Spring '73	2.62	2.34	2.46	1.46			
Fall '73	2.50	1.94	2.41	1.92			
Spring '74	3.22	2.38	2.82	2.10	2.60	8.31**	1
Information							
Fall '72	4.70	2.28	0.98	2.22			
Spring '73	4.82	2.38	1.44	1.84			
Fall '73	5.37	2.20	1.84	2.58			
Spring '74	5.10	2.64	2.07	2.88	11.74**	5.93**	1
Total							
Fall '72	3.25	1.72	1.55	1.66			
Spring '73	3.37	2.14	2.05	1.56			
Fall '73	3.57	2.12	2.02	2.22			
Spring '74	3.65	2.50	2.37	2.34	7.92**	29.19**	2

*$p < .05$.
**$p < .01$.

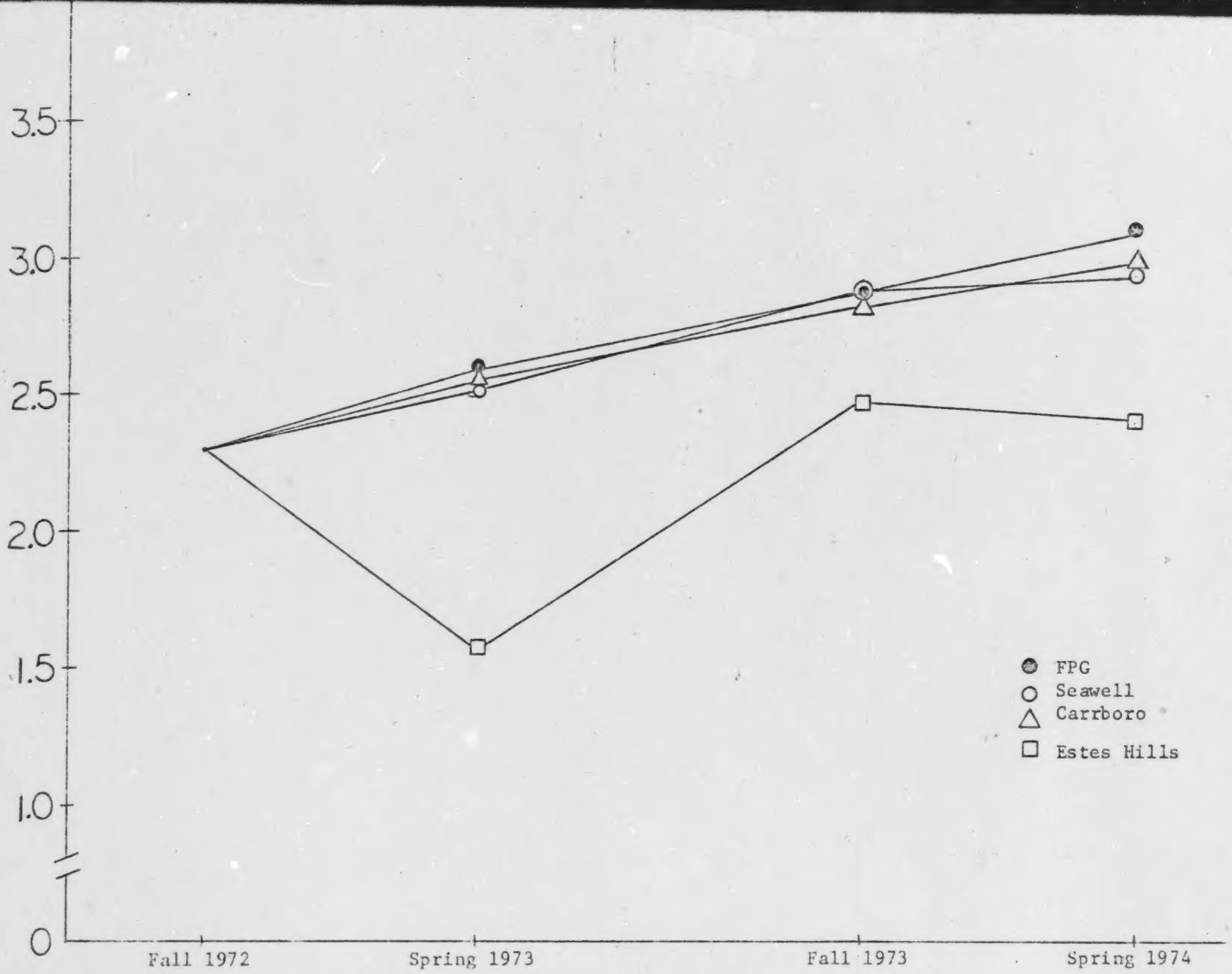

Figure 1. Mathematics Mean Grade Equivalent Scores Covaried by Fall, 1972 Mathematics Scores for Longitudinal Sample.

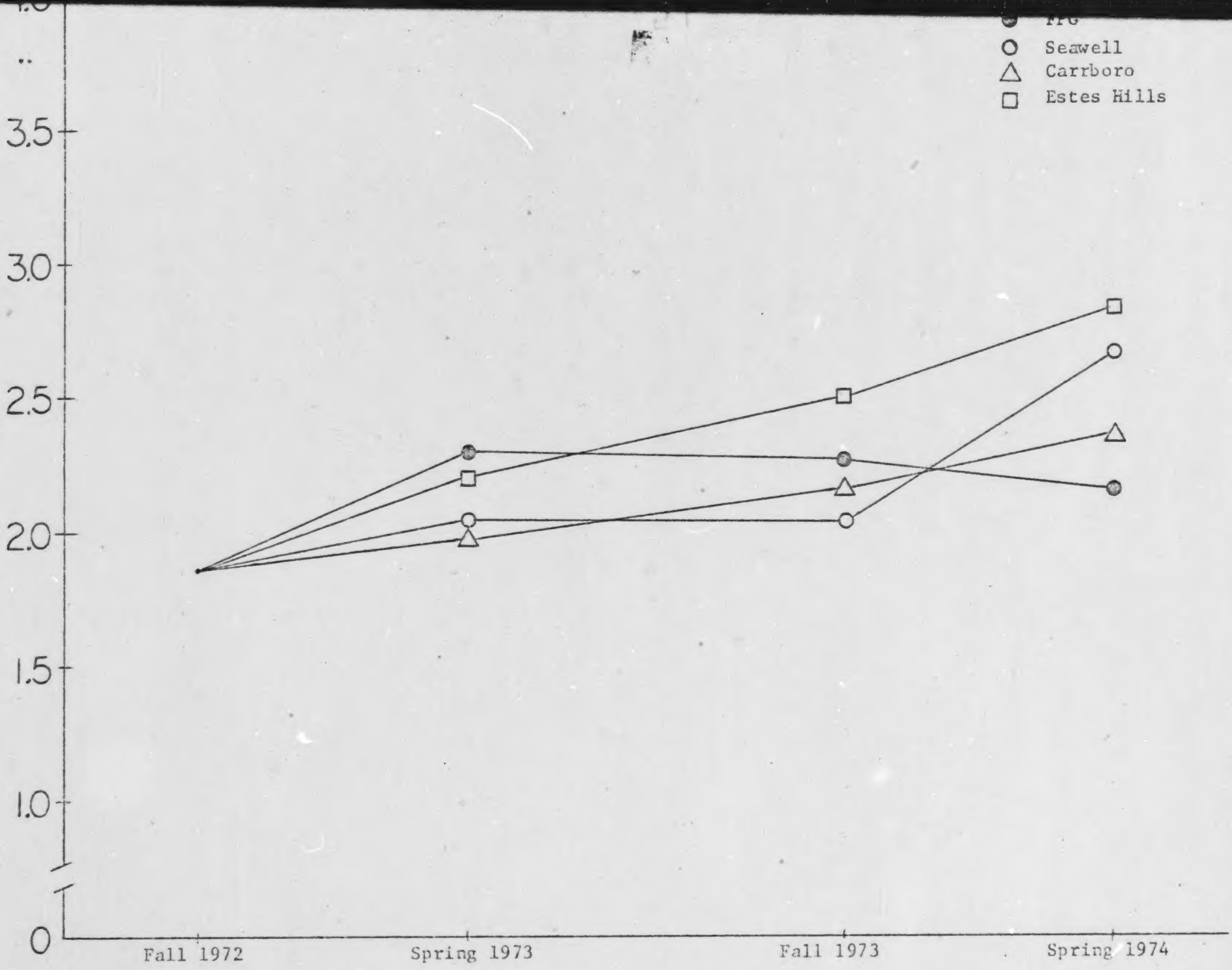

Figure 2. Reading Recognition Mean Grade Equivalent Scores Covaried by Fall, 1972 Reading Recognition Scores for Longitudinal Sample.

Reading comprehension scores showed significant interaction between school and time effects. Scores for students at FPG decreased over time, while students at the other schools increased at different rates. The analysis of covariance showed that when pre-test level was controlled there were significant differences among schools in Spring, 1974 with Seawell students gaining most, students at Carrboro and Estes Hills gaining less, and FPG students losing ground relative to the others (see Figure 3).

Spelling mean scores showed a significant increase over time, but there were no school effects. With pre-test scores as covariate there were significant differences among schools in the Spring and Fall of 1973. These differences were not maintained in Spring, 1974 (see Figure 4). Students at FPG and Estes Hills did least well in Spelling with Carrboro children scoreing higher than the others.

Information showed a pattern similar to that of mathematics with significant differences both among schools and across time. FPG students had better information scores at first and maintained their advantage over the two years. When the pre-test was covaried, there were significant differences among schools only in Spring, 1974 when Carrboro students attained most and FPG students did least well (see Figure 5).

Total PIAT mean scores showed a significant increase over time for the longitudinal sample. FPG students scored at higher overall levels than students in the other schools and remained there. The children in the other three settings changed rank in relation to each other during the two year period. When analysis of covariance was used on the Total PIAT scores, significant differences were found among schools in Spring, 1973 and Spring, 1974 (see Figure 6). Carrboro and Seawell students achieved best overall and FPG students did least well when initial level of achievement was controlled.

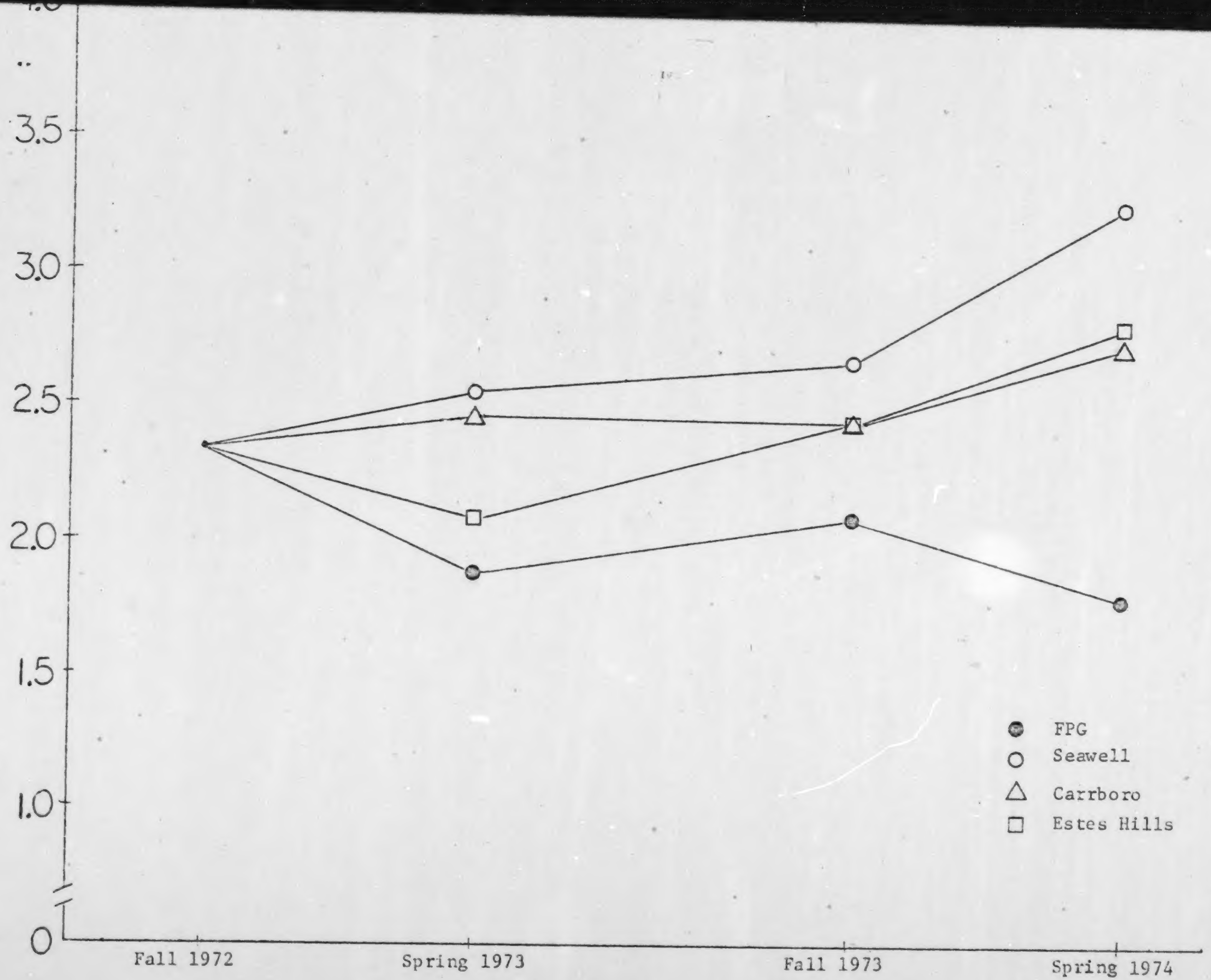

Figure 3. Reading Comprehension Mean Grade Equivalent Scores Covaried by Fall, 1972 Reading Comprehension Scores for Longitudinal Sample.

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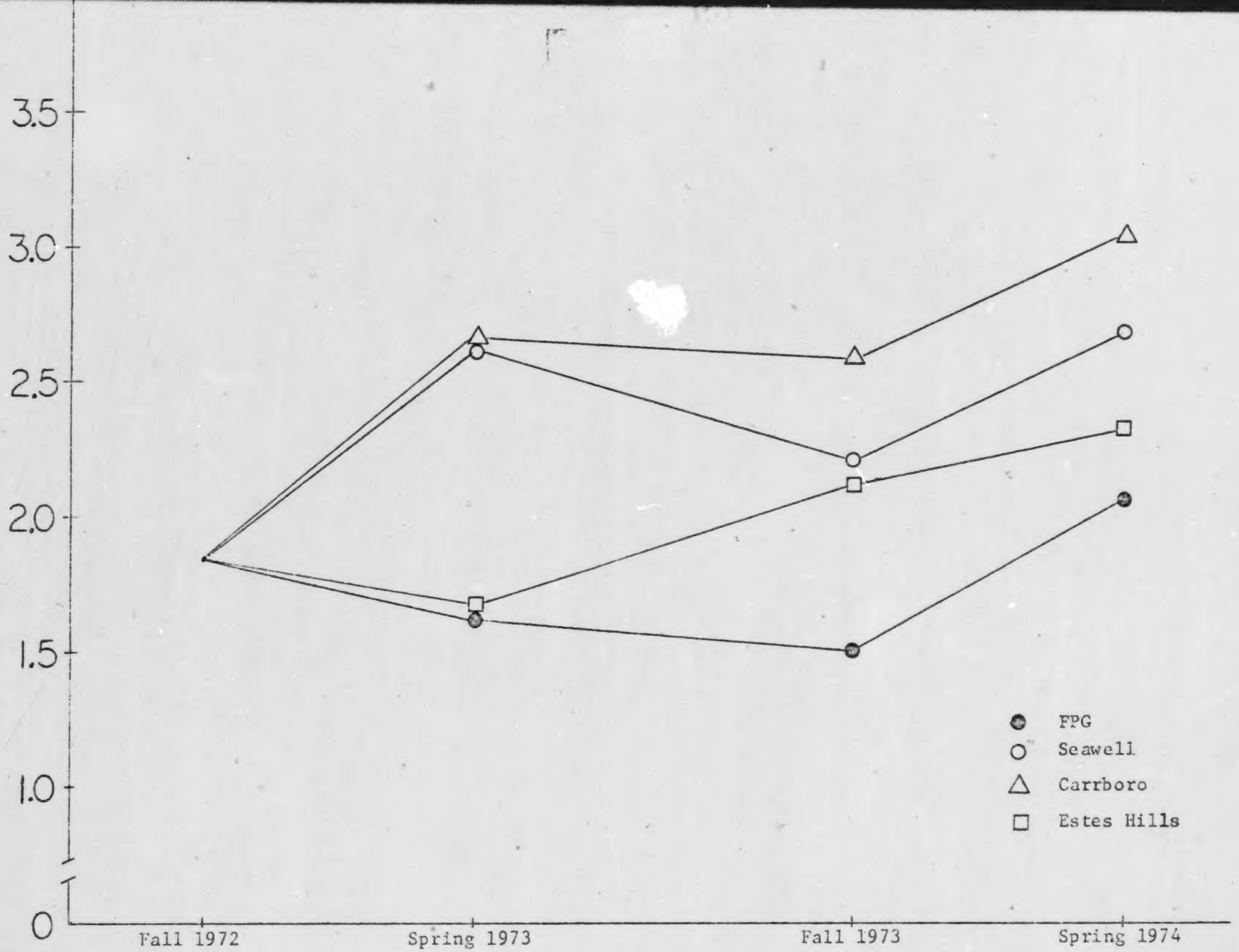

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Figure 4. Spelling Mean Grade Equivalent Scores Covaried by Fall, 1972 Spelling Scores for Longitudinal Sample.

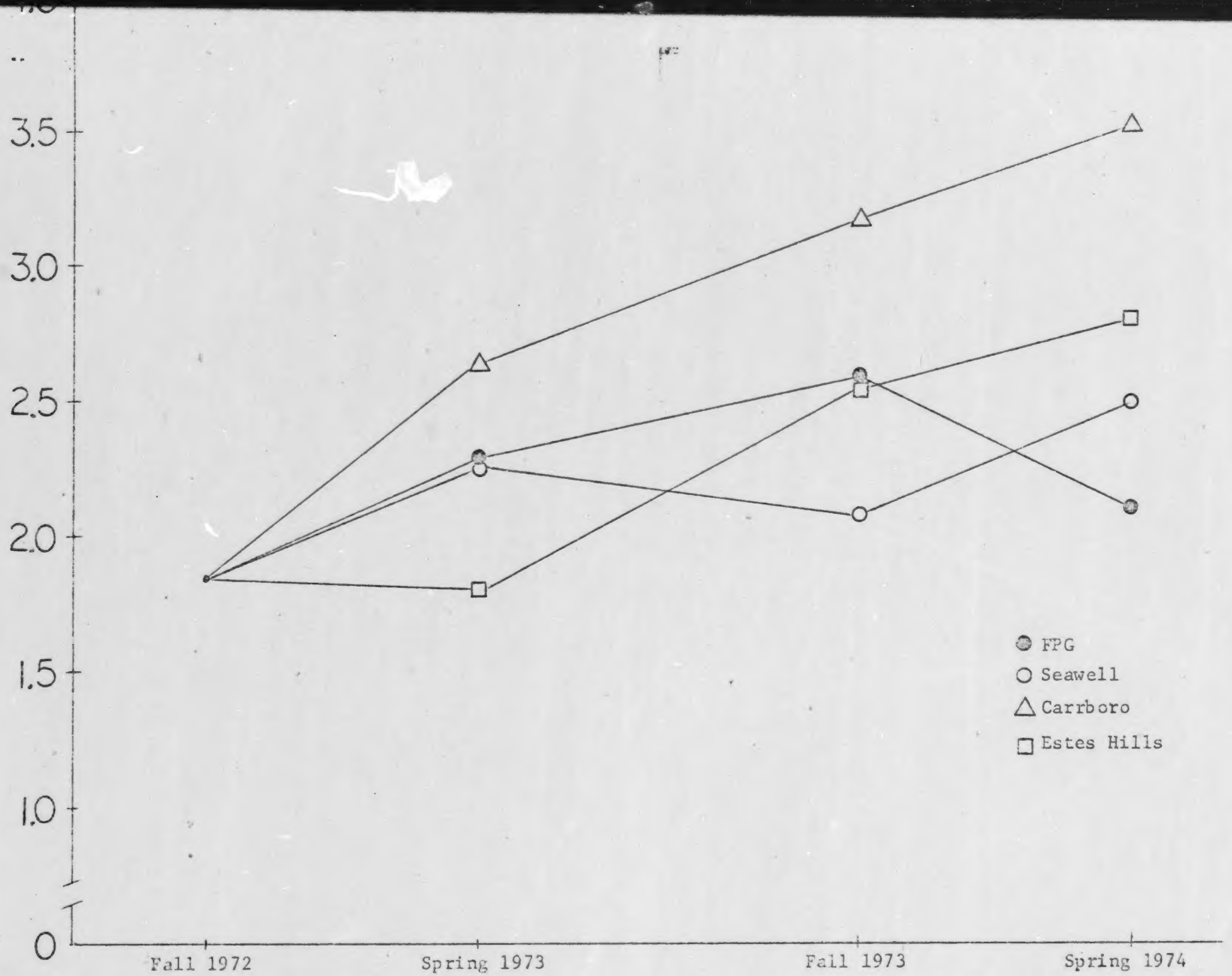

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Figure 5. Information Mean Grade Equivalent Scores Covaried by Fall, 1972 Information Scores for Longitudinal Sample.

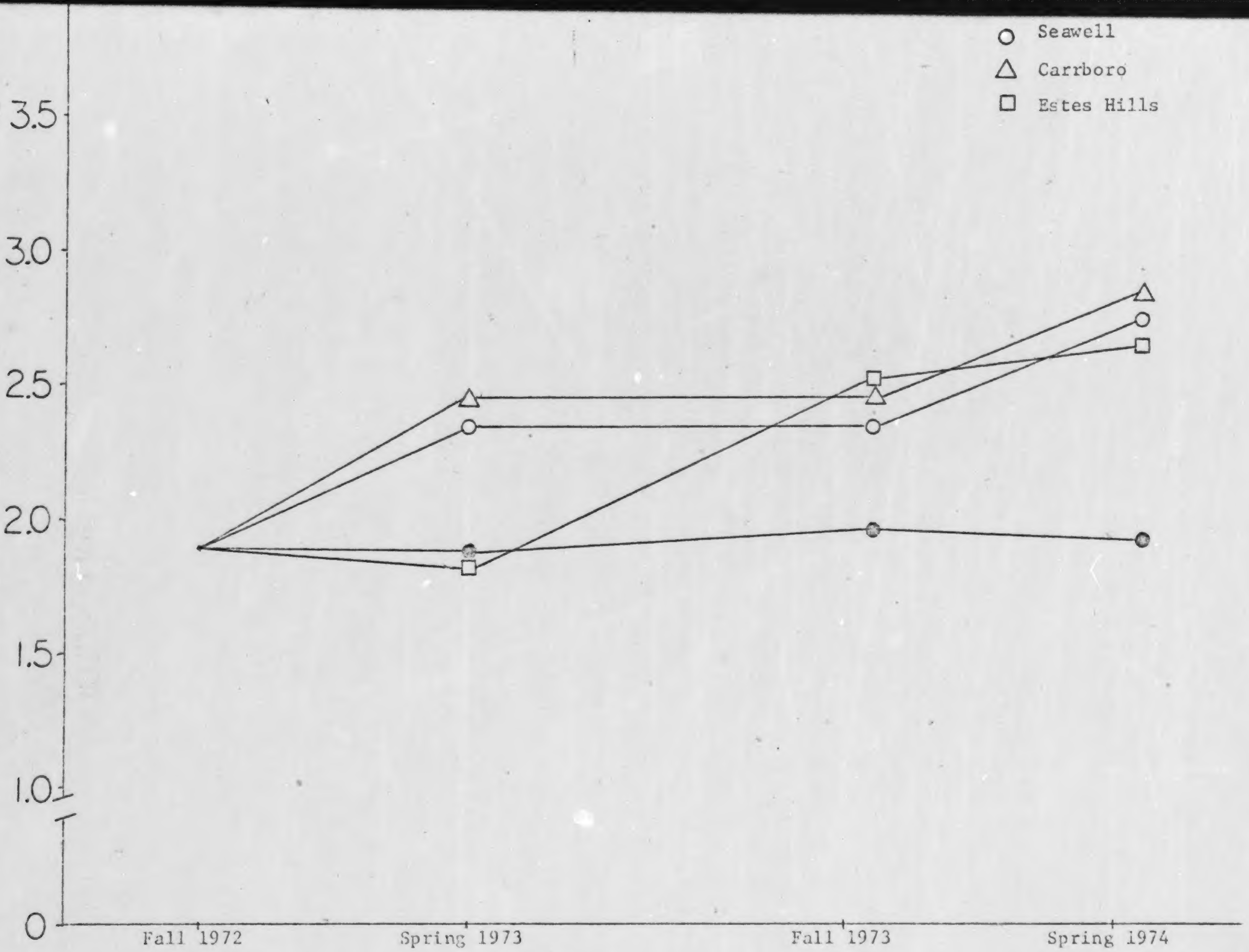


Figure 6. Total Mean PIAT Scores Covaried by Fall, 1972 Total Scores for Longitudinal Sample.

Discussion. There was a statistically significant change over time for all PIAT achievement areas. These changes, however, were not large in actual grade equivalent terms. Change over the two years for the overall group ranged from a .32 years gain in reading comprehension to .85 years in mathematics. The gain in total achievement averaged .67 years for the two year period.

Differences among the settings when initial achievement level was controlled were found only for reading comprehension, information and total achievement. Different settings appeared to be differentially effective in various areas of achievement. In reading comprehension, placement in the open classroom setting with the individualized program (Seawell) resulted in the greatest gain, while those in the open classroom with the resource teacher (FPG) gained least. In the area of information, one self-contained group gained most, while the group in the open setting with a resource teacher gained least. In total achievement, the children in the open classroom with the resource teacher gained least, while the other three groups gained similar larger amounts, with an especially large gain in students in one self-contained classroom.

Teacher Ratings

CBI ratings were analyzed with two way repeat measure analysis of variance (4 times x 4 schools) for children in the project since Fall, 1972. These data will be found in Table 14.

Table 14

Mean Scores for the Longitudinal Sample on the CBI

	Mean Scores				F-Ratios		
	FPG (N=4)	Seawell (N=5)	Carrboro (N=9)	Estes Hills	School	Time	Scho Tim
Task Orientation							
Fall '72	9.00	5.40	8.77	11.60			
Spring '73	8.00	7.40	8.88	11.40			
Fall '73	6.50	6.60	9.11	11.20			
Spring '74	7.25	6.20	9.88	10.60			
					11.04**	0.72	1
Distractibility							
Fall '72	8.50	10.60	8.33	6.40			
Spring '73	8.75	10.00	7.33	6.80			
Fall '73	8.25	10.80	7.22	6.40			
Spring '74	10.50	11.00	6.11	6.60			
					3.43*	.43	2
Extroversion							
Fall '72	8.75	8.00	9.33	11.40			
Spring '73	6.75	7.80	9.00	10.60			
Fall '73	8.25	6.40	9.55	9.20			
Spring '74	8.25	8.20	9.88	9.20			
					2.89	3.23*	2
Introversion							
Fall '72	8.00	8.00	5.66	4.40			
Spring '73	9.50	7.80	4.77	5.40			
Fall '73	7.75	7.20	5.88	6.00			
Spring '74	7.75	6.20	5.11	4.40			
					4.09*	1.41	
Considerateness							
Fall '72	10.25	6.20	9.55	10.40			
Spring '73	10.50	7.20	9.33	9.60			
Fall '73	8.50	7.60	10.11	10.20			
Spring '74	10.00	6.80	9.77	8.60			
					3.85*	.42	
Hostility							
Fall '72	5.75	9.80	6.77	6.80			
Spring '73	5.75	9.60	6.33	8.00			
Fall '73	6.00	8.00	6.44	6.80			
Spring '74	5.50	9.00	6.55	7.80			
					1.80	0.64	

* $p < .05$.
** $p < .01$.

Results. Task orientation was rated differently in the four schools but did not change significantly over time. Children at Estes Hills were rated as most task oriented and those at Seawell were seen as least task oriented. Those at Carrboro and FPG were rated at intermediate levels in this dimension.

Children at Seawell were rated as most distractible throughout the two years with FPG students next highest and rising sharply in distractibility at the time of the final rating. Estes Hills and Carrboro children were seen as least distractible throughout.

Children in the two self-contained classrooms were rated as most highly extroverted. Estes Hills students were more highly rated in this dimension than Carrboro students at first but positions reversed at the last ratings with Estes Hills children being rated lower than their original ratings. Seawell and FPG students were described to be less extroverted than the others, but their ratings were more variable across the four measures reversing position more than once.

Ratings on introversion differed significantly among the schools but did not vary across time. FPG and Seawell students were perceived by their teachers as more introverted than were Carrboro and Estes Hills children.

FPG and Estes Hills children were rated variably in considerateness across time. They and Carrboro students were perceived as similarly high in this dimension while FPG students were described as low. There were no significant differences among schools or across time in ratings of hostility.

Discussion. The longitudinal data on the CBI showed few changes over time that were not specific to particular schools or settings. Children in the open settings were seen as less task oriented and more distractible than those in self contained classrooms with the difference in distractibility increasing over time.

Similar results were found for introversion and extroversion with students in open settings being rated as less extroverted and more introverted than those in self-contained settings. Those in self-contained classrooms were seen as less extroverted across time.

While all students were rated similarly in hostility, those at Seawell were seen as less considerate than those in the other settings. Hostility ratings were more variable for students at FPG from one rating to the next.

As has been previously mentioned, ratings of another's behavior are made on a basis of previous experiences which establish an internal framework of expectancies, attitudes, and concepts. New experiences feed into the matrix of this existing framework to form the basis for new judgements. It seems reasonable that recent experiences influence new judgements more strongly than do earlier ones. Thus, each person asked to make ratings, such as the CBI, does so on the basis of what he currently observes in the behavior of the individual being judged and an anchor point provided by his past experiences.

From this perspective, the open classroom teachers continually have a base of experience with normal children present which provides a constantly updated anchoring point of wider breadth than the special education teachers have available in their self-contained classrooms. On the other hand, the teachers have used the CBI several times in the course of the study, which may have provided all of them a broader base for their judgements as time passes and more ratings are made.

Student Attitudes

Because the Interview was done in the fall only when subjects entered the project and children in the longitudinal sample could have entered either in fall of 1972 or 1973, the fall Interview scores were not considered. Mean scores from the two spring administrations were compared for students in each of the four schools by means of repeat measure analyses of variance for school and time (4 schools x 2 times).

Results. As can be seen in Table 15, there were no significant differences among schools or between the two administrations of the Interview.

Discussion. There appear to be no differences in the four variables measured with the Structured Interview for the longitudinal sample. This may, of course, be due to the nature of the instrument. It did appear to the interviewer that the children enjoyed it less each time the experience was repeated.

Classroom Behavior

SCAN classroom behavior observations were collected only twice in mid-year of 1972-73 and 1973-74. On those two occasions, observations were made of each child during five minutes for each of four days. The frequency that each SCAN dimension occurred was converted into a proportion of the total observations. These proportions were then examined by means of analysis of variance done for students in the four schools and related t tests on differences from one year to the next. Table 16 shows the average proportion of behavior in the 12 SCAN dimensions for children in the longitudinal sample in the four settings. There were no occurrences of some SCAN dimensions for some schools; therefore, no formal statistical analysis for differences among schools was possible for them.

Table 15

Structured Interview Scores for Spring 1973 and Spring 1974 (Longitudinal Sample)

	Mean Scores				F-Ratios		
	FPG (N=4)	Seawell (N=4)	Carrboro (N=9)	Estes Hills (N=5)	School	Time	Scho Tim
School Experience							
Spring '73	65.75	54.75	62.44	69.20			
Spring '74	61.00	64.00	59.11	70.20			
					1.38	0.07	2.
Self-Esteem							
Spring '73	41.25	35.50	34.44	41.00			
Spring '74	53.75	42.75	32.55	35.40			
					2.60	1.29	2.
Expressiveness							
Spring '73	22.75	23.00[a]	24.44	25.20			
Spring '74	21.75	24.33	23.33	26.60			
					.98	.02	.
Expectancy for Success							
Spring '73	88.75	78.33[a]	82.22	87.80			
Spring '74	75.50	81.33	72.66	80.00			
					0.29	2.90	0.

[a] N=3.

Results. There were significant differences among schools in the proportion of constructive self-directed activity observed during both years. FPG and Carrboro students did not change in either year in this dimension. Both Seawell and Estes Hills children, however, were seen in significantly less self-directed activity in 1973-74 than they had been the previous year.

Attending behavior was also different in the four schools both years. FPG students were lowest in this behavior both years, not showing significant differences from one year to then next. Students in the other three schools each increased significantly in the amount of attending behavior observed.

Passive behavior did not differ among students in the four schools but did decrease sharply among students at FPG, Carrboro and Estes Hills. Distractible behavior did not vary significantly among the schools and there were no changes in this dimension. Amounts of social interaction differed significantly among the children in the four schools in 1973-74. Although differences in 1972-73 were not significant in this dimension, they were in the same direction with the students at FPG and Seawell interacting with others more often than those at Carrboro or Estes Hills. Only Estes Hills children changed in this dimension from last year to this year, showing a significant decrease in their amount of social interaction.

The proportion of behavior found in the other six categories was small or non-existent. There was essentially no constructive play seen anywhere except at Seawell school during 1973-74. Non-constructive self-directed activity was more prominant at Seawell especially during 1973-74. Gross motor activity, aggression and teacher interaction was not prominent in any setting either year.

Table 16

Mean SCAN Proportions for the Longitudinal Sample

	Mean Proportions				
	FPG (N=4)	Seawell (N=5)	Carrboro (N=9)	Estes Hills (N=5)	F-Rat
Constructive Self-Direction					
1972-1973	25.8	51.1	23.5	34.1	5.9
1973-1974	35.4	14.6	28.6	14.1	3.6
t	1.59	4.90**	1.49	4.57**	
Attending					
1972-1973	3.5	4.1	20.1	25.1	11.
1973-1974	17.5	25.0	31.1	61.8	5.
t	1.34	2.19*	2.41*	2.67*	
Constructive Play					
1972-1973	0.0	0.0	0.0	0.0	
1973-1974	0.0	13.8	.9	0.0	
t		3.74**	1.00		
Task Oriented Conversation					
1972-1973	1.0	0.1	1.5	0.0	
1973-1974	1.4	0.1	3.0	0.5	2.
t	1.00	0.0	1.04	2.44*	
Non-Constructive Self-Direction					
1972-1973	1.4	2.3	0.7	0.8	1.
1973-1974	0.0	5.3	0.9	2.3	
t	2.04*	0.73	0.51	1.50	
Distractibility					
1972-1973	13.3	4.6	11.4	11.0	2.
1973-1974	12.2	8.6	9.9	6.8	0.
t	0.2	0.89	0.83	1.17	
Passivity					
1972-1973	25.8	12.0	26.1	18.8	2.
1973-1974	11.2	10.5	3.3	2.0	1.
t	2.41*	0.41	9.78**	3.53**	
Gross Motor Activity					
1972-1973	12.9	13.0	6.3	7.1	1
1973-1974	6.6	7.0	8.5	6.8	0
t	1.51	1.21	1.19	0.15	
Social Interaction					
1972-1973	10.2	9.3	6.9	2.5	1
1973-1974	12.2	12.1	5.2	0.3	6
t	0.27	0.71	0.75	3.20**	
Dependency					
1972-1973	4.5	1.8	2.2	0.3	2
1973-1974	0.0	2.1	6.2	5.0	
t	2.43*	0.16	1.97*	1.82	
Aggression					
1972-1973	0.0	0.5	0.0	0.0	
1973-1974	0.0	0.1	2.7	0.0	
t		0.78	1.41		
Teacher Interaction					
1972-1973	1.2	0.6	0.2	0.0	
1973-1974	0.0	0.1	1.6	0.3	
t	1.00	1.50	2.42	1.63	

* $p < .05$.
** $p < .01$.

Discussion. Differences in classroom behavior among children in the four settings are complex. Last year children in one open classroom (Seawell) were observed in more constructive self-directed behavior than either students in the other open classroom (FPG) or in one self-contained class (Carrboro). Students at Estes Hills were also high in this behavior. During the current year there has been a reversal in standings on this dimension in which children in the FPG open classroom and the Carrboro self-contained classroom remained at about the same level, while children in the Seawell open classroom and the Estes Hills self-contained classroom decreased sharply.

Proportion of attending seemed related to the above. FPG students did not shift in the proportion of time spent attending, while children in the other three settings increased their attending behavior. Students at Seawell and Estes Hills showed particularly large increases here. The large proportion of constructive play seen at Seawell School also seems related to the drop in constructive self-directed behavior and the increase seen in attending and is consistent with the individualized program at Seawell.

Social interaction has been consistently higher in open classrooms when the entire group of children is considered. For the longitudinal group, however, this difference was not statistically significant last year. This year, however, children at FPG and Seawell were similarly high in their proportion of social interaction, while children in the two self-contained classrooms showed lower proportions of this dimension. Students at Estes Hills, in fact, decreased the proportion of time spent interacting with each other.

The longitudinal data showed no differences among settings in either dependent or passive behavior this year or last. Students at FPG, however, were seen in less dependent and passive behavior this year than last, appearing more similar to the children at Seawell than they had the previous year. Reduction in the proportion of passive behavior in the two self-contained classrooms was even more striking this year. Children at Carrboro, however, were more dependent in their behavior this year than they had been. Although the difference was not significant, students at Estes Hills also showed a strong tendency in the same direction.

Academic Achievement of Junior High School Subjects

The PIAT was administered to EMR children who had gone from this program into junior high school in the spring of their first junior high school year. There were such children who left elementary school in the spring of 1972 and some who left in the spring of 1973 in the above group. The distribution of children in terms of their initial placement in a study setting was such that it was desirable to group them according to whether they came from an open or self-contained setting. Then the PIAT scores each obtained in his last spring before going to junior high and those obtained in the spring of the first junior high year were compared by using *t* tests for related measures. Also, *t*-tests for independent measures were used to compare differences in mean scores between the two settings.

Results. There were no significant differences between children from open or self-contained classrooms at pre-testing for any of the six subtests of the PIAT (see Table 17). Significant differences were found between the scores obtained in the elementary school and those from the spring of the first junior high school year for children from self-contained classrooms in mathematics. Children from the open classrooms, howeve obtained significantly higher scores in mathematics ($p < .05$), reading

Table 17

Mean PIAT Scores for EMR Subjects in Junior High School

	Mean Scores		
	Open (N=12)	Self-Contained (N=6)	t
Mathematics			
Spring-Elementary	3.65	2.98	1.73
Spring-Junior High	4.55	3.51	0.00
Related t	2.92*	2.14*	
Reading Recognition			
Spring-Elementary	2.93	2.25	1.56
Spring-Junior High	2.96	2.41	1.21
Related t	.30	.87	
Reading Comprehension			
Spring-Elementary	3.00	2.56	1.16
Spring-Junior High	3.42	2.66	1.59
Related t	2.48*	.73	
Spelling			
Spring-Elementary	3.53	2.66	1.05
Spring-Junior High	4.05	2.45	1.69
Related t	2.11*	.85	
Information			
Spring-Elementary	2.65	3.33	.90
Spring-Junior High	4.08	3.80	.39
Related t	3.97**	1.69	
Total			
Spring-Elementary	3.08	2.65	1.12
Spring-Junior High	3.65	2.80	1.87*
Related t	5.20**	1.77	

* $p < .05$.
** $p < .01$.

comprehension ($p < .05$), information ($p < .01$) spelling ($p < .05$), and total test ($p < .01$) at the end of their first year of junior high.

Discussion. There were no significant differences between EMR children coming from open and self-contained classrooms in their last spring of elementary school. EMR youngsters coming out of open, mainstreamed elementary school classes gained significantly in four areas of achievement and in overall achievement during their first junior high school year. EMR children from self-contained special education classes, gained significantly only in mathematics in their first year of junior high school. Children from the open classrooms achieved significantly better on the total test than did those from self-contained classrooms at the end of their first year in junior high.

Sociodrama Program[1]

Objectives

The sociodramatist met with a group of children in each of the four settings once a week for 50 minute periods utilizing group discussion, creative drama and group process evaluation. The groups at Estes Hills and Carrboro consisted solely of EMR children from self-contained classrooms while the groups at FPG and Seawell consisted of both EMR and non-EMR children from open classrooms. Non-EMR children in these groups were selected from FPG students because their teachers thought they could benefit from the group experience and from Seawell because it was felt that they could strengthen the group.

Objectives of the sociodrama project were: (1) to increase self-esteem;(2) to improve attitude towards school;(3) to increase appropriate classroom behavior;(4) to increase ability to generate alternative solutions to problem social situations;and,(5) to increase the contribution of ideas and appropriate motor and verbal activity during sociodrama sessions.

Description of Program[2]

Sociodrama sessions were started in all four schools by October 1, 1973. A total of 23 children had had previous experience with sociodrama. By Spring, 1974, students in Carrboro and FPG had met 27 times, those at Seawell had met 23 times and those at Estes Hills had met 30 times. A description of the sociodrama sessions, as reported by the sociodramatist, from each school will be presented here, followed by data from the evaluation instruments. Appendix D has a list of specific topics covered in the sociodrama sessions.

[1] Techniques of data collection and instrumentation were developed, data was collected, and much of the section was written by Susan Greenberg with assistance from Vicki Weiner.

[2] This information was supplied by Ms. Joan Tetel, Sociodramatist.

FPG. Four EMR students and seven non-EMR students have been in sociodrama at FPG school since the first session on September 24, 1973. With the students coming to sociodrama from three different pods and having to leave the classroom building and go to the research building (a distance of approximately 1/2 block) it was relatively difficult to form a cohesive group. By January, however, the group was proceeding smoothly with its members behaving responsibly much of the time.

Most of the children participated and attended well although there was occasional disruptive behavior on the part of some and others participated only occasionally. This group demonstrated clearly in discussion and performance that they felt children must learn to solve many of their own school-based problems. They tended to seek little authority-figure (teacher, principal) intervention in their skits.

The quality of the role playing improved greatly as the behavior stabilized. One EMR boy assumed a leadership role during the last two months, to the degree that it must be regarded as a break-through for him. All the EMR students progressed and communicated positive attitudes towards this activity and about themselves with the exception of one boy whose responses have vacillated between appropriate, sensitive participation to withdrawal.

It is important to note that there has been positive and sustained interaction between EMR and non-EMR students in this group - associations initiated through the sociodrama activity have been reinforced in other school activities.

Seawell. Six EMR and five non-EMR children have been in the sociodrama group since September 26, 1973. In view of previous difficulties in establishing a functioning group at Seawell, positive students with leadership potential were selected to fill out the remaining spaces in this sociodrama group, with the hope that they would serve as models for the EMR students. Through January this failed to provide the support needed as two of these students felt uncomfortable in the group and resented being in it. Although the others cooperated very well, they did not exert the stabilizing influence expected.

Some progress has been made since last year. All EMR students in the group previously were willing to perform and seemed to feel successful when they did so. Despite the establishment of simple ground rules developed by the entire group, it was seldom possible for all the members to adhere to them. In January there still was much hostility and inability to settle down. This may have reflected the children's apparent feeling that they had complete freedom of activity while in school and their expectation that this would be true in all school activities. However, the students slowly learned how to attend to the discussions preceding and following dramatizations and became much more receptive to the actual procedure of role-playing, so that by mid-year they often became very involved in the presentations at least for short periods of time.

Two EMR boys have shown considerable improvement in attending behavior, and willingness and ability to perform in the dramatizations. They have been favorably influenced by the presence and cooperative behavior of two of the non-EMR boys. By spring there was no doubt that the inclusion of four positive, cooperative, non-EMR students finally became an effective influence on the others, although one EMR girl seemed to remain threatened by their presence.

Four factors which may be seen as positive indications of the group activity were that:

1. All the students clamored to have the opportunity to have "a guest" attend a session with him. We were able to set up a procedure whereby all

the group members agreed that positive cooperation by a group member warranted his right to bring a guest for a future session.

2. All of the students entering Junior High next year indicated to me that they wished to take creative drama there.

3. This year the group which has met in the music storage-conference room has had less difficulty in learning the instruments alone and has been eager to help arrange chairs into the circle.

4. The level of concentration was often so improved that the quality of the skits and degree of problem solving they generated were at a much higher level than at any time during the other two years of the sociodrama.

Carrboro. With only one new child the Carrboro group has responded enthusiastically and very cooperatively to the sociodrama situation since the initial session. Every child has been willing to participate; all appeared to experience feelings of success and satisfaction in their performance. There has been noticeable improvement in several children who were quite shy and hesitant last year. On the whole, attending behavior has been good; the group has been responsive, flexible, and able to focus upon the process of selecting alternative solutions to problems, often arriving at them without much intervention from the sociodrama facilitator.

They have not brought in authority figures to solve problems as often as have children in the other self-contained classroom. On the other hand, they have been more prone to appeal to authority than were the children in the open setting at FPG.

Their responses to the last three sociodrama sessions on preparation for mainstreaming were quite meaningful. By the third session, they were beginning to conceptualize the fact that they will be on their own far more next year. They were able to verbalize and act out both their fears and anticipations about this change to regular classrooms next year.

However, many of their sociodramatizations indicated that they can be easily manipulated and swayed by other people. Follow-up work in social problem solving should be planned as a support measure for next year, particularly for those children entering junior high school.

This has been a rather stable, responsive group to work with during the past three years.

Estes Hills. Seven of these children had exposure to sociodrama last year while four were new to it this year. Of these four newcomers, one responded immediately with enthusiasm, ability, and leadership while the other three were somewhat hesitant and reticent. All were attentive and cooperative.

There have been four outstanding leaders in this group who assumed much responsibility. By mid-year all students participated voluntarily; there was improvement in the areas of skills and self-expression for all. The group functioned beautifully when the classroom teacher was in the room, and disintegrated when she was not there. As long as she was present, the students were able to focus upon the activity at hand, participate adequately in group discussions, perform well in roles, and refrain from any disruptive or hostile interactions.

When she left the room, several of the students were unable to concentrate, became hostile toward one another, initiated verbal and physical fights, and became quite agitated. Concurrently, they said they liked sociodrama, wanted to continue with the activity of the moment, and yelled at one another to be quiet.

In the sociodrama sessions, great emphasis has been placed upon the necessity and opportunities for decision making, establishing a valuing process, self-control, etc. but progress in these areas does not appear to have been as marked at Estes Hills as it was at Carrboro. This group has had difficulty in selecting alternative solutions to problems without considerable intervention from children taking authority figure roles. Often, resolution of a problem situation in the sociodrama was attempted by bringing in authority figures (such as teacher, principal, parent) who solved the problem in authoritarian style. Solutions were rarely found by those in child roles.

It would appear that the transition to classroom settings where more emphasis is placed upon self-direction will be more difficult for these students. If any group of students warrants the time for follow-up research efforts after the changes into regular classrooms and the junior high school have been completed, it should be this group. Appendix presents activities in the sociodrama group this year.

Test Instruments

Self-Concept. The Self-Concept Questionnaire was designed to elicit the child's feelings about himself through his perceptions of others feelings about him, his feelings about his behavior, school performance and physical self. Each child was requested to make a verbal response to each of ten incomplete sentences presented orally by the examiner.
A verbatim record was made of each response. Each response was scored according to whether a positive, neutral or negative feeling was expressed. For example, items such as "My teacher thinks I . . . 'am smart.'" or "My friends think I . . . 'am kind.'" were scored as positive; items such as "When it comes to looks I . . . 'am in between.'" or "Compared with other kids I . . . 'am the same.'" were scored as neutral; and items such as "The way I usually act makes me feel . . . 'embarasses.'" were scored as negative. Responses were scored on agreement of two scorers. Three points were assigned for positive responses, two points for neutral responses and one point for negative responses.

Total score and the number of each kind of response were recorded. The questionnaire was administered in October and in May.

Attitude Towards School. The Attitude Towards School Questionnaire was designed to assess the child's feelings about school by eliciting his perceptions of school activities, school staff, and other students in response to ten incomplete sentence items. The administration and scoring procedures were the same as for the Self-Concept Questionnaire. It too was administered in October and in May.

Social Problem Solving. The Social Situation Questionnaire was designed to assess the student's ability to generate alternative solutions to social problems as well as to assess the appropriateness of his solutions. The test consists of descriptions of eight social situations judged to be similar to those often encountered in school. Each situation was read to the student who was then asked to generate alternative solutions. Responses were scored as appropriate or inappropriate on agreement of two scorers. For example, for the question, "A student in the class comes over and shoves you for no reason. What would you do?", "Tell the teacher" or "Tell him to leave me alone" were judged to be appropriate responses, while "Shove him back" or "Beat him up" were judged to be inappropriate responses.

Total number of responses, number of appropriate responses, and number of inappropriate responses were recorded. The questionnaire was administered in October and in May.

Qualitative Ratings. The Qualitative Sociodrama Rating Scale was designed to measure the degree that each child manifested given characteristics described by the sociodramatist as important for effective participation in sociodrama. It is in a rating scale format which was filled out by the sociodramatist. Each child was rated on twelve dimensions of attitude and behavior according to a five point scale. The scale was filled out in October and in May.

Sociodrama Behavior. The Sociodrama Behavior Schedule, consisting of 8 behavior rating categories (see Appendix A), was designed to classify relevant on-going behavior during sociodrama sessions. Subjects were observed in succession, at ten second intervals for six five minute periods spaced two minutes apart. Thus, there were thirty observations per session for each child. Observations were made of each child on two successive sessions providing a total of sixty observations per child. Observations were made in October, January and May. Inter-scorer reliability of .97 for two observers was established.

Classroom Behavior. The Classroom Behavior Schedule consists of 8 behavior categories (see Appendix A) designed to classify relevant classroom behavior. Observations were taken in the classroom for each child on four successive days in October and in May. Each child's behavior was recorded every ten seconds for five minutes, giving a total of 120 observations per child for four days.

Subjects

Subjects for this evaluation were selected from two groups of children who participated in sociodrama activities. One group was composed of students from the self-contained EMR classroom at Estes Hills. The other group was composed of both EMR and non-EMR children from the open classrooms at FPG who were in sociodrama. Subjects given the Self-Concept Questionnaire, Attitude Towards School Questionnaire, Social Situation Questionnaire, and the Sociodrama Qualitative Rating Scale included four male EMR students from the Estes Hills group, four male EMR students and four non-EMR students (two male and two female) from the FPG group. All EMR students at FPG who participated in sociodrama were males, therefore males were selected from the Estes Hills group in order to eliminate sex differences between these two groups of EMR children. Non-EMR subjects from FPG included females because there were not four non-EMR male students in the group at FPG.

Sociodrama Observations were made on the EMR students and non-EMR students for whom questionnaire data was obtained. Four additional female EMR students at Estes Hills were observed in order to obtain data that were more representative of total group behavior during the Sociodrama sessions there.

Classroom observations were made on the four EMR students at Estes Hills and the four EMR students at FPG for whom questionnaire data had been obtained.

Results

The Kolmogorov-Smirnov two sample test was used to compare data for FPG EMR children with those at Estes Hills, and FPG EMR students with the FPG non-EMR children on the Self Concept Questionnaire, Attitude Towards School Questionnaire and Social Situation Questionnaire given in the fall and in the spring. There were no significant differences between these groups on the questionnaire data either time (see Table 18).

The Wilcoxon matched pairs signed ranks test was used to compare fall and spring questionnaire data for the total sample and for EMR children in the sample. On the Self-Concept Questionnaire there were significantly fewer positive responses in the spring for the total sample ($\underline{p} < .01$) and for the EMR children ($\underline{p} < .02$) than there had been in the fall. There were significantly greater numbers of negative and neutral responses combined in the spring for the total sample ($\underline{p} < .01$) and for the EMR children ($\underline{p} < .05$). Total score on the questionnaire was significantly lower in the spring for the total sample ($\underline{p} < .01$) and for EMR children ($\underline{p} < .05$).

Table 18

Proportions of Responses to Sociodrama Questionnaires

	Estes Hills EMR (N=8)		FPG - EMR (N=4)		FPG - Non-EMR (N=4)	
	Fall	Spring	Fall	Spring	Fall	Spring
Attitude Toward School						
Positive	52.5	67.5	45.0	32.5	67.5	66.7
Negative	10.0	7.5	17.5	30.0	0.0	3.3
Neutral	37.5	25.0	37.5	37.5	32.5	30.0
Self-Concept						
Positive	55.0	40.0	52.5	37.5	60.0	33.3
Negative	17.5	20.0	22.5	27.5	12.5	16.7
Neutral	27.5	40.0	25.0	35.0	27.5	50.0
Problem Situations						
Appropriate	68	89	62	76	94	84
Inappropriate	32	11	38	24	6	16

On the Attitude Towards School Questionnaire there were no significant difference between fall and spring data.

On the Social Situation Questionnaire the total number of responses was significantly smaller in the spring than in the fall for the EMR children ($p < .05$). However, there were significantly fewer inappropriate responses in the spring than in the fall for EMR children ($p < .05$). In addition, the proportion of appropriate responses to total responses was significantly higher in the spring than the fall for EMR children ($p < .05$), although there was not a significant difference between number of appropriate responses in the fall and spring.

The Wilcoxon matched pairs signed ranks test was also used to compare fall and spring data from the Qualitative Rating Scale. Scores were significantly higher in the spring than in fall for EMR children ($p < .05$). Figures 7, 8, and 9 show mean ratings on the Qualitative Rating Scale for FPG EMR, FPG non-EMR and Estes Hills EMR children in the fall and in the spring.

The frequencies of behavior in each category of classroom and sociodrama observations were transformed into proportions of the total observations made. EMR children in the two schools were compared on each proportion in the eight Classroom Observation categories using independent *t*-tests. Fall and spring mean proportions were compared for each category in each school using related *t*-tests (see Table 19).

The Classroom Observations showed no differences from fall to spring for any category in either school. Students in FPG were observed in more non-attending and work preparation and in less constructive work and

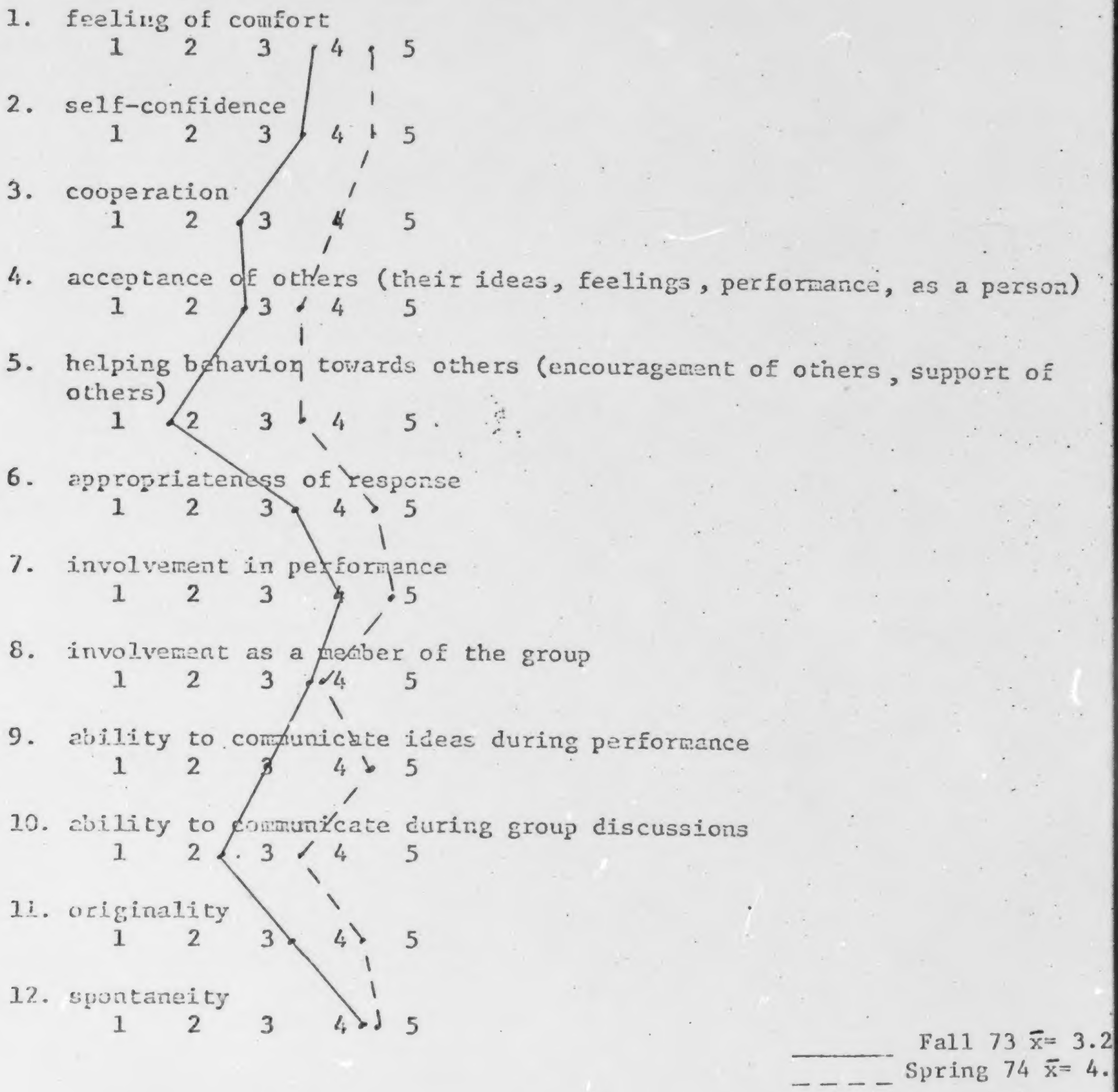
Estes Hills EMR

Qualitative Sociodrama Rating Scale

Please rate (circle) the degree to which the child manifests the following characteristics according to the following scale:

1 2 3 4 5
low high

with 1 being equal to almost no evidence of the characteristic, and 5 being equal to a very high degree of the characteristic.



1. feeling of comfort
   1 2 3 4 5
2. self-confidence
   1 2 3 4 5
3. cooperation
   1 2 3 4 5
4. acceptance of others (their ideas, feelings, performance, as a person)
   1 2 3 4 5
5. helping behavior towards others (encouragement of others, support of others)
   1 2 3 4 5
6. appropriateness of response
   1 2 3 4 5
7. involvement in performance
   1 2 3 4 5
8. involvement as a member of the group
   1 2 3 4 5
9. ability to communicate ideas during performance
   1 2 3 4 5
10. ability to communicate during group discussions
    1 2 3 4 5
11. originality
    1 2 3 4 5
12. spontaneity
    1 2 3 4 5

———— Fall 73 $\bar{x}$= 3.2
– – – – Spring 74 $\bar{x}$= 4.

Figure 7. Mean Ratings Given Estes Hills EMR Children by Sociodramatist.

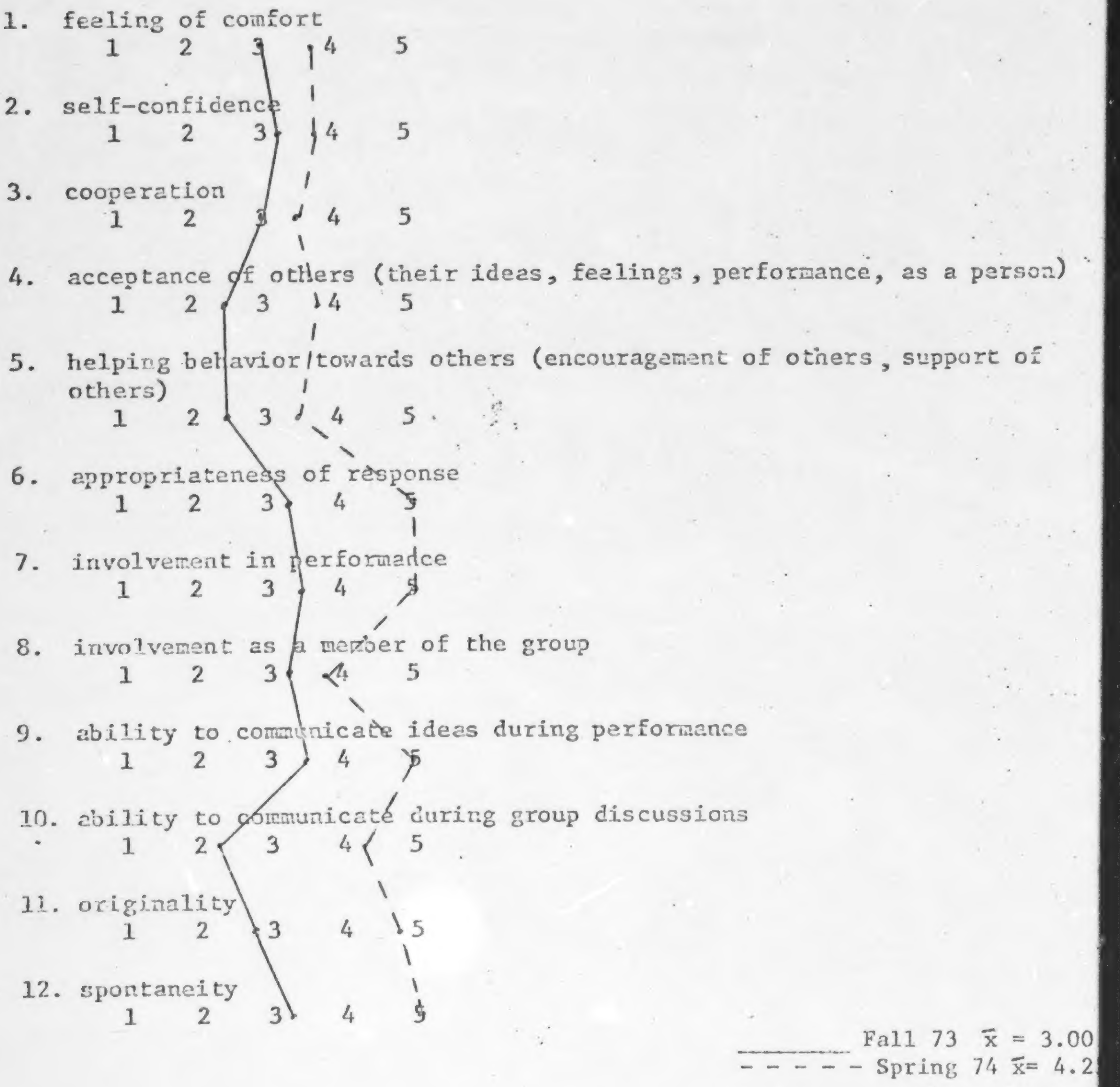
FPG EMR

Qualitative Sociodrama Rating Scale

Please rate (circle) the degree to which the child manifests the following characteristics according to the following scale:

1 2 3 4 5
low high

with 1 being equal to almost no evidence of the characteristic, and 5 being equal to a very high degree of the characteristic.



1. feeling of comfort
   1 2 3 4 5
2. self-confidence
   1 2 3 4 5
3. cooperation
   1 2 3 4 5
4. acceptance of others (their ideas, feelings, performance, as a person)
   1 2 3 4 5
5. helping behavior towards others (encouragement of others, support of others)
   1 2 3 4 5
6. appropriateness of response
   1 2 3 4 5
7. involvement in performance
   1 2 3 4 5
8. involvement as a member of the group
   1 2 3 4 5
9. ability to communicate ideas during performance
   1 2 3 4 5
10. ability to communicate during group discussions
    1 2 3 4 5
11. originality
    1 2 3 4 5
12. spontaneity
    1 2 3 4 5

________ Fall 73 $\bar{x}$ = 3.00
- - - - - Spring 74 $\bar{x}$= 4.2

Figure 8. Mean Ratings Given FPG EMR Children by Sociodramatist.

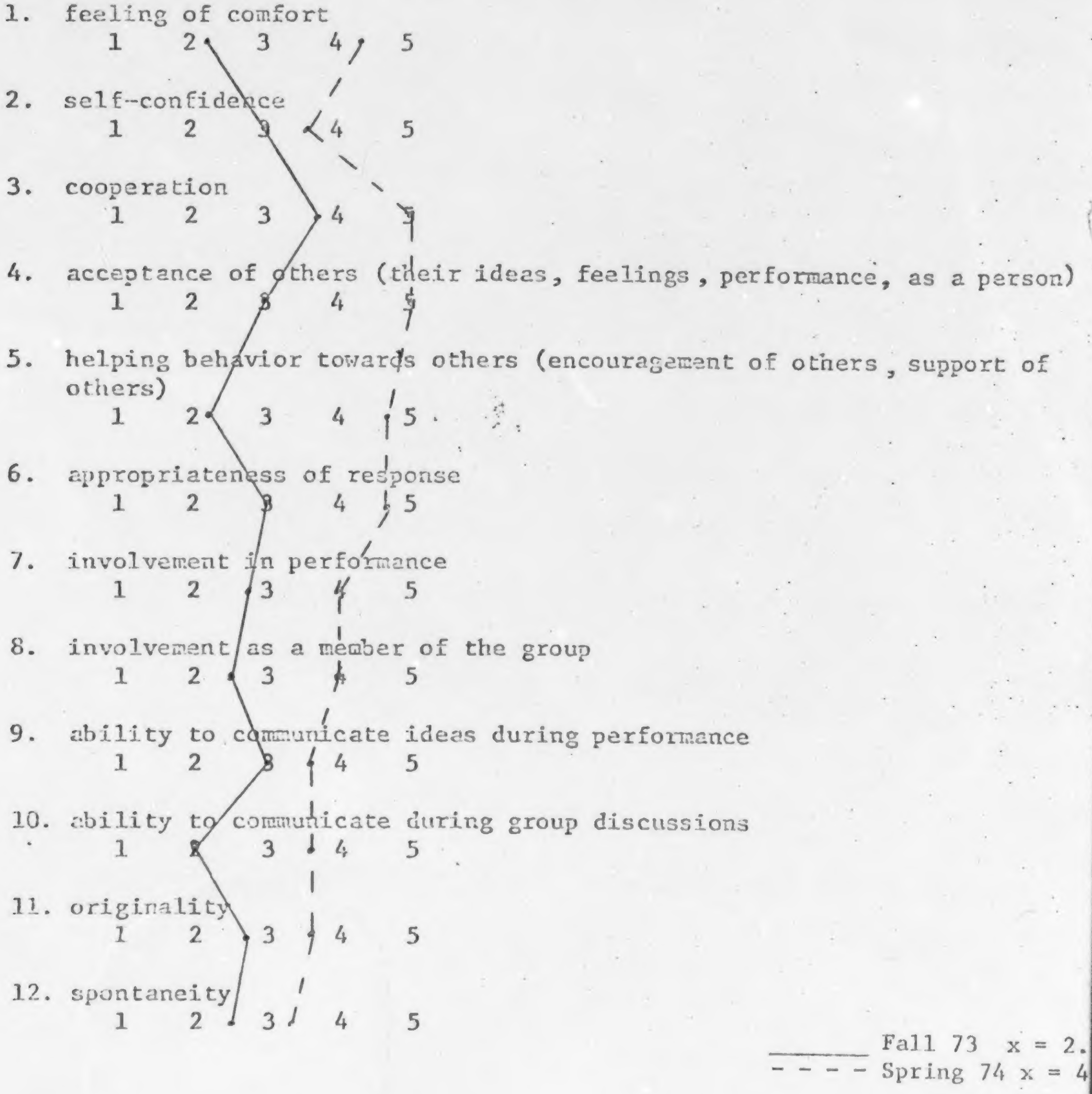
FPG non-EMR

Qualitative Sociodrama Rating Scale

Please rate (circle) the degree to which the child manifests the following characteristics according to the following scale:

1 2 3 4 5
low high

with 1 being equal to almost no evidence of the characteristic, and 5 being equal to a very high degree of the characteristic.



1. feeling of comfort
   1 2 3 4 5
2. self-confidence
   1 2 3 4 5
3. cooperation
   1 2 3 4 5
4. acceptance of others (their ideas, feelings, performance, as a person)
   1 2 3 4 5
5. helping behavior towards others (encouragement of others, support of others)
   1 2 3 4 5
6. appropriateness of response
   1 2 3 4 5
7. involvement in performance
   1 2 3 4 5
8. involvement as a member of the group
   1 2 3 4 5
9. ability to communicate ideas during performance
   1 2 3 4 5
10. ability to communicate during group discussions
    1 2 3 4 5
11. originality
    1 2 3 4 5
12. spontaneity
    1 2 3 4 5

Figure 9. Mean Ratings Given FPG Non-EMR Children by Sociodramatist.

Table 19

Proportions of Classroom Observation Categories for Sociodrama EMR Subjects

	School		
	FPG (N=4)	Estes Hills (N=4)	t
Aggression			
Fall	0.00	0.00	
Spring	0.01	0.00	
t	1.00		
Inappropriate Behavior			
Fall	0.11	0.00	
Spring	0.41	0.01	2.2
t	1.59	1.00	
Non-Attending			
Fall	0.28	0.01	3.2
Spring	0.09	0.04	1.2
t	2.23	1.95	
Attending			
Fall	0.25	0.22	0.3
Spring	0.10	0.34	3.
t	1.33	3.89	
Work Preparation			
Fall	0.10	0.01	3.
Spring	0.04	0.04	0.
t	1.95	1.53	
Constructive Work			
Fall	0.15	0.53	3.
Spring	0.21	0.26	0.
t	0.38	2.64	
Cooperation			
Fall	0.10	0.24	3.
Spring	0.14	0.28	0.
t	0.24	0.69	
Social Interaction			
Fall	0.01	0.00	
Spring	0.01	0.04	1.
t	0.57	1.46	

Note: Some categories of behavior never occurred, therefore, no significance st
could be obtained.

* p <.05.

Table 20

Mean Proportion of Each Behavior Category During Sociodrama Sessions

	Open Classroom						Self-Contained Classroom		
	EMR (N=3)			Non-EMR (N=3)			EMR (N=8)		
	Fall '73	Winter '74	Spring '74	Fall '73	Winter '74	Spring '74	Fall '73	Winter '74	Spring '74
Aggressive Behavior	.01	.00	.01	.00	.00	.00	.00	.00	.00
Inappropriate Behavior	.17	.08	.10	.00	.02	.01	.02	.04	.03
Seeking or receiving information or assistance	.03	.06	.01	.01	.00	.01	.01	.01	.01
Non-Attending	.16	.05	.06	.03	.09	.04	.03	.03	.06
Attending	.53	.72	.51	.84	.75	.74	.87	.78	.70
Independent, Self-directed Behavior	.09	.04	.01	.08	.06	.07	.04	.06	.05
Self-Initiated Behavior	.02	.08	.24	.04	.10	.18	.02	.08	.15
Teacher Initiated Behavior	.00	.00	.00	.00	.00	.00	.01	.00	.00

Table 21

F-Ratios for Comparisons of Sociodrama Behavior Observation Dimensions

	EMR Subjects			FPG Subjects		
	Setting[a]	Time	Setting x Time	Status[b]	Time	Status x Time
Aggressive Behavior						
Inappropriate Behavior	9.15*	1.02	2.29			
Seeking/Receiving Information	3.04	1.08	1.67			
Non-Attending	2.82	2.14	3.50	.34	.31	1.39
Attending	22.72**	4.65*	4.36*	7.58	.65	1.15
Self-Directed Behavior	1.33	.01	.40	.58	1.62	.88
Self-Initiated Behavior	.46	9.29**	.84	.01	3.89	.21
Teacher Initiated Behavior						

Note: Some categories of behavior failed to occur in one or more groups; therefor no significance statistics could be obtained.

[a] Setting compares three EMR children in open with eight in self-contained classroo Significance data are based on the harmonic mean of 4.36.

[b] Status compares three EMR with three non-EMR subjects in the open classroom.

* $p < .05$.

** $p < .01$.

cooperation in the fall than were Estes Hills students. These differences were not present in the spring observations.

Mean proportions from the Sociodrama Observations will be found in Table 20. Two comparisons were made with these data. The behavior of the eight EMR children in the Estes Hills sociodrama group were compared with that of the three EMR children for whom all data were available from the FPG sociodrama group over the three observation periods. Similarly, the behavior of the three EMR children at FPG was compared with the behavior of the three non-EMR children at FPG over the three observation periods. These data will be found in Table 21.

EMR and non-EMR children at FPG did not behave differently in the sociodrama sessions that were observed for dimensions that could be tested. Nor were there differences across time for these subjects. EMR children in the open and self-contained classrooms, however, did behave differently over time in sociodrama in some dimensions.

EMR children from the open classroom were observed in more inappropriate behavior during all three observational periods than were EMR children from the self-contained unit. It appeared that the non-EMR children from the open classroom were quite similar to the EMR children in the self-contained class in behaving inappropriately only infrequently or not at all during the sociodrama sessions. Attending behavior was less frequent among EMR children at FPG in Fall and Spring than that for non-EMR and Estes Hills students. Self-initiated sociodrama behavior increased for all children over the course of the year.

Discussion

The pre-test data indicated that EMR and non-EMR children included in sociodrama groups did not differ in their self-concepts, attitudes towards school or social problem solving ability. In addition, EMR children in open and self-contained settings did not differ on these dimensions at the beginning of the school year. Although self-concept was lower, there was no change in attitude towards school by spring. This, however, may be a result of the children feeling more comfortable with the examiners at the time of the post-tests.

Social problem solving ability improved during the year for the students participating in sociodrama. Since the EMR children gave fewer inappropriate solutions to the problems in spring than in fall the total number of solutions decreased.

Sociodrama activities apparently made no difference in the classroom behavior of participating EMR or non-EMR children from either setting. EMR students at FPG were more inappropriate in their behavior and paid attention less than did those from Estes Hills during sociodrama.

One finding of change over time in sociodrama was that FPG EMR children attended more in winter than either fall or spring. More importantly, all the children in sociodrama did initiate their own sociodrama-relevant behavior more often with longer experience in the groups.

The sociodrama program has been evaluated differently each of the three years it has been carried out. The effects of the first year of the sociodrama program were evaluated with interview data, a narrative description of the process in each group, and video tape observations collected at Frank Porter Graham. The data suggested that the program had a positive effect on self-evaluations in two groups. The program seemed to be more successful and to have greater impact at Frank Porter

Graham and Carrboro than in the other group. This differential effect was clearly due to the characteristics of the classroom environments in terms of the kind of structure present and the availability of non-EMR students to stimulate group process.

During the second year of the program, students in the self-contained classroom previously in the study were able to continue without great loss from the level of progress attained during the first year. The other self-contained class also moved rapidly and smoothly into participation in the sociodrama activities. Factors facilitating the sociodrama process in these classrooms seemed to be the pre-existence of the social group and familiarity of the children with each other and the relatively high degree of structure imposed on the groups in this setting.

In the open classrooms, the sociodrama process was sometimes facilitated by the contributions of the non-EMR children in the group. At the same time, it was more difficult to attain a workable group structure for sociodrama in the open classrooms where the students did not otherwise work together as a group and had less teacher-imposed structure on their behavior. In the open classrooms more self-determination was experienced and this was sometimes expressed in negative (from the adult point of view) ways.

During the current, final year of the program several questionnaire, rating scale and observational devices were developed and used with children in two of the four settings to evaluate the sociodrama program. Some of these instruments were relatively less productive than others, but it appears that sociodrama participation results in more discriminating and accurate problem solving and in an increase in self-initiated behavior relevant to the sociodrama process.

The sociodrama program continues to be an exciting part of the project in spite of the relatively weak support given it by the research instruments. It must be kept in mind that they are new, previously untried devices which were used with a very small number of children. Even with these deficits, the findings did indicate some success in meeting the broad objectives of this component of the project.

Media Program Evaluation[1]

During the first year of the project the delivery of service by the media technicians was highly effective as evaluated by the quantity and quality of materials produced, and by expressed teacher satisfaction with the service. An external evaluator concluded that this service was vital to the total project and was perhaps effective beyond what one could expect given the amount of funds spent for the service.

Data for evaluating the media program were more adequate the second year than the first. Forms for reporting activities and for describing instructional materials provided more detailed information for evaluation. The specialists spent most of their time developing and producing materials, as might be expected, but also spent considerable time trying materials out and otherwise working with children. They reported making many different kinds of materials available to the children. Virtually all of these materials were felt to be effective as judged by the number of times the children used them. Some differences appeared between the way media personnel functioned in the different settings in terms of time spent in production of materials as opposed to consulting with teachers or working directly with children.

This year the media component has changed the placement of personnel and the organization of production. All personnel are now located in Lincoln Center, allowing for better coordination of the instructional packages from planning stages through production. Operating from assigned schools, as they did previously, the media people lacked feedback from project colleagues. Having closer contact with the other media people has resulted in improved coordination for the entire program.

[1] Development of techniques, collection of data and much of the writing of this section was done by Susan Greenberg Foreman and Vickie Weiner.

Media efforts in the current year have been concentrated in two areas: 1) collection and dissemination of project information and 2) production of individual learning materials within a planned program.

In the first area, a number of activities have been involved. Sociodrama sessions during 1972-73 have been videotaped, edited and prepared for final presentation. A new 16 mm film about the project has been made and shown to the children in the Chapel Hill-Carrboro Schools, the Chapel Hill-Carrboro School Board and Association for Retarded Children members. A copy of this film has been provided for State Department of Public Instruction files. A catalogue of all project produced instructional materials has been prepared and a large chart displaying various instructional media is ready for distribution.

In addition, several other dissemination activities have continued. The DEEPER Log has continued to make news of the project and instructional ideas from the project available to other project directors in the state, State Department of Public Instruction personnel, and others involved in Title III programs. Personnel on the project staff have spoken at various local and state meetings as well as at least one national scientific meeting (a list of all such presentations will be found in Appendix E). A worksho series has been planned and presented to local teachers including those involved in the DEEPER project (See Appendix F).

In the second area, FPG Center and DEEPER staffs, cooperating to study the effectiveness of the materials being produced, planned a number of procedures to obtain more adequate evaluation data. To find out which types of materials were used most frequently the media specialists were asked to categorize all materials on a number of dimensions. In addition, a card was to be attached to each material so that frequency of use could be recorded by the teacher. This data proved impossible to obtain with sufficient accuracy to make it useable.

In order to facilitate the production of media packages concentrating on subject areas, specific academic needs of the target population were identified through item analysis of the Peabody Individual Achievement Test and teacher conferences. The media specialists and research personnel then developed objectives in four math areas (measurement, money, time, number concepts and numeration) around which instructional materials were to be designed. Four students at Estes Hills, four at Carrboro and four at Seawell were tested by a media specialist with a specially designed achievement test in November and again in May.

Six students were to receive special tutoring from one of the media specialists using the media math package, while six students received routine classroom exposure to the media materials. In addition, a questionnaire to be filled out by the teacher was devised to measure ease of use, helpfulness to students and the degree to which the teacher felt the students enjoyed using each media package.

A media package concentrating on money use was devised by the media specialists. Objectives of the money package were to have the students master: 1) recognizing of coins, 2) making a purchase and receiving change up to $2, 3) identifying equivalent coin combinations, 4) identifying the value of groups of coins, 5) identifying the coins needed to buy given articles, and 6) using dollar and cent notation. Pre- and post-testing of these skills were carried out. Scores on the money use post-test were significantly higher than scores on the pre-test for the group which received special tutoring ($\underline{t} = 2.23$, $\underline{p} \angle .05$). There were no significant differences between pre- and post-test scores on the math section of the Peabody Individual Achievement Test for the special tutoring group or the regular classroom exposure group, however.

The media component of DEEPER faced several difficulties in the course of its three year history.[1]

1. Four half-time media positions have been filled by three people the first year, four entirely new people the second year, and two new people the third year (with one person carrying over from the second to the third year though not in the same position) totaling nine persons. Each of the three years had an almost completely different media component profile--unlike the directorial, socio-dramatic and research profiles, which have remained unchanged. The teaching profile also has been somewhat varied, due to different teachers staffing some of the pods, and students moving to other classrooms. Given that media personnel were expected to interact principally with the teaching staff, it is not difficult to perceive that there were disadvantages inherent in the yearly turnover--at the least a certain amount of discontinuity, confusion and complication. There were also advantages; i.e., different skills and ideas were made available to the project.

2. It was recommended, when the project was funded for its third year, that: materials planning and production be centralized; designers be disassociated from teaching aid roles in the classrooms they served; their materials and those of their predecessors be evaluated in a sound and acceptable manner; and project dissemination be increased. On the face of it, and especially in terms of research needs, these recommendations seem entirely reasonable. However, the removal of media personnel from the classrooms severed a connection that was difficult to repair. At best, communication between various project components was never satisfactory to all involved, but at the least, teachers had come to depend upon the

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[1] Paula Dean, a media materials designer this year, submitted several of these provocative and accurate observations.

frequent contact they had with the media people. This contact resulted in a fairly constant supplying of rather immediate teacher and student needs.

The teachers had a limited amount of patience with testing, objectives, re-testing and re-thinking. They needed and wanted assistance, ideas and materials--lots of them--and they wanted them when they needed them which was right then. Their reactions were experiential, intuitive: "My students liked (or didn't like) that. ", "This would be good for ______.","I once used ________ and it was great.", "Get us more films.", "Those games are life savers.", "Can you help us transport the kids to ______.", "Do you have a ______.", "Do you know of a _______."

3. Besides removing materials designers from scenes of former goodwill and enthusiasm, centralizing media production had an additional effect of making it more generally obvious and available, so that other than project teachers made use of it.

4. The demands made upon the media component of DEEPER often seemed fragmented and contradictory. Some went far afield of the usual role, or exceeded the definition of what an educational media specialist, or materials designer, is. Perhaps the project never really settled on a definition. It seemed sometimes that everyone involved, perhaps including the media personnel themselves, had different ideas of what was being done, what should be done, and why it was to be done.

Recommendations for future projects involving media personnel include the need for careful, precise definition of role, or roles. In addition, it would be desirable to budget a certain amount of money to pay for additional help which would provide assistance in the routine,time consuming chores associated with materials production, replication, equipment maintenance, etc. Materials designers could hire and pay for this assistance as needed on a part-time, temporary basis.

A link with the media courses in the (UNC) School of Education could be established such that any production being planned could be discussed initially with the instructors of courses to determine if the project might provide useful assignments for their students. A typical arrangement might provide that the school system or project pay for the materials required for an agreed upon assignment, the student execute the assignment for his course, and the school receives the product, or copy of it.

In-service training and workshops specific to the media program should be increased so that teachers can become more independent of media services and at the same time more capable of using them precisely and creatively. A system for retrieval, reproduction, and repair of materials that are still wanted but are falling apart or getting lost should be built.

Summary and Conclusions

There were three major objectives for the study. The first was to describe the relative impact of three different classroom organizational patterns on educable retarded children. The three settings were chosen to permit assessment of the impact of two different styles of mainstream, open classrooms in contrast to self-contained, special education classrooms on EMR children. The second major objective was to determine the effect of sociodrama techniques on improvement in self-concept and attitudes toward school; and the third, to assess the effectiveness of a media program designed to assist instruction in alternative settings.

The project involved 32 EMR students ages 9-12 the first year, 38 EMR students ages 8-12 during the second year and 30 EMR students ages 8-13 the third year of the study. All but a few of the students were black children from relatively low socioeconomic backgrounds. These students were placed in three settings: (a) graded open classroom environments with a resource teacher, (b) multi-graded open classrooms emphasizing individualized instruction, and (c) two self-contained special education classrooms (the self-contained unit at Estes Hills School was added to the study the second year). The sociodrama specialist met with each of the EMR student groups once a week for 45-60 minute sessions in creative drama. Also, media technicians were assigned to develop materials to supplement the instructional program for EMR students.

The first year each child was pre- and post-tested on achievement, self-concept and attitude measures, and classroom observations were taken during the Fall and Spring. Also, each child received a battery of learning styles measures and an individual intelligence test in the Fall. The second and third years the children were pre- post-tested on achievement and classroom behavior ratings. Pre-test self-concept and attitude measures were obtained for children new to the study each year and post-test self-concept and attitude measures were obtained for all children. Classroom observations were obtained once during the second and once during the third years for all children. Parent behavior ratings were obtained once during the second year and an attempt was made to obtain ratings from parents the third year. IQ data were obtained where necessary for the new children each year. At the end of the project analysis of the data permits the following conclusions:

(1) Academic Achievement. Although no significant differences in overall achievement gains were found among the various programs the first year of the project, differences in the relative gains of EMR students were apparent in subsequent years. In general, students in the multi-age open classroom setting and those in self-contained units showed a pattern of continued improvement over the 1973-1974 project period, whereas those in the graded open classrooms failed to show substantial progress.

At the same time, the findings are equivocal in several respects. First, it should be noted that the students who were placed in the graded open classroom with a resource teacher scored consistently higher on the PIAT than those in the other settings. Secondly, the overall achievement levels of students in the program each year were not markedly different from what one would expect given their ability scores, and in some cases they were less. Therefore, one must conclude that convincing evidence was not found to suggest that one classroom plan or delivery system was clearly superior to another in producing meaningful gains in academic achievement for EMR students.

(2) Student Attitudes. Although the EMR students in the graded open classrooms obtained higher self-esteem scores than students in the other

settings during 1973-74, consistent and reliable differences among the various groups have not been demonstrated over the course of the project. On the other hand, data were obtained which indicated that students with higher self-esteem earned higher achievement scores and interacted with their peers more frequently in the classroom. Also, students who had more positive attitudes toward themselves were more expressive and showed a higher expectancy for success regardless of setting. Finally, those students who showed more favorably attitudes toward themselves and their school experience were generally rated more favorably by their teachers. Therefore, although the data do not suggest that different classroom environments have differential effects on the attitudes of EMR students, it was clear that positive attitudes toward one's self and school experience are important correlates of academic progress and adjustment.

(3) Classroom Behavior Patterns. A second major finding which was obtained each year of the project was that EMR children in the two open classroom settings interacted more frequently with their peers than those in the special classes. Also, the data indicated that this interaction was primarily with non-EMR children. On the other hand, EMR children in the special classes displayed higher frequencies of attending behavior and participation in teacher directed activities than those in the open classes. Thus, considerable evidence was found for the assumption that open classrooms elicit characteristically different types of behavior in relation to that observed in self-contained units.

In addition, several trends were noted in the data over the three year period which are worthy of comment. First, children in graded open classrooms emitted higher frequencies of non-constructive behavior during the first year of the project; however, this type of behavior declined in the second year and was not observed frequently the third year. Secondly, children in the multi-age and self-contained unit the first year showed more passive responding than those in the graded open classroom, whereas in subsequent years these differences were not observed. For many of these children the first project year was also their first year in the open classroom. Accordingly, the results suggest that some types of non-productive behavior may be the consequence of the child's initial adjustment to a particular classroom setting.

Finally, what was not found over the three years of the project was perhaps as significant as what was observed. No significant differences were found over the three year period among the classes in the frequencies of observed dependency or aggression. Similarly, consistent differences in the frequency of distractibility were not observed. Thus, the study does not provide any evidence for the frequently voiced concern that mildly retarded children develop adjustment and/or behavior problems in mainstream classes.

(4) Teacher Perceptions. One of the more consistent findings over the three year period of the project is that EMR students in the open classroom settings were rated less favorably by their teachers than were their peers in self-contained classrooms. In particular, students in the open settings were seen as less task-orienced and more distractible than were those in special classes. Also, little change was observed from fall to spring in this pattern of ratings. These findings suggest that the teachers of EMR children in mainstream class settings may evaluate the behavior of EMR children in relation to their expectations for non-EMR children, whereas special class teachers may evaluate the behavior of their children from their more restricted frame of reference.

(5) Parent Attitude. It proved to be extremely difficult either to involve the parents of EMR children in the program or to obtain attitudinal data from them. This negative result was quite significant in highlighting

the urgent need for better relationships between the school and parents of mildly retarded children in the local community. Also, the project has provided the system with a catalogue of procedures which were not effective, and which in some cases were detrimental to good home-school relations. The overriding implication to be drawn from this experience is that schools must have an aggressive and energetic outreach program in order to meet the needs of EMR children at home.

(6) Student Learning Styles. In general, the findings of the correlational analyses over the three years of the project indicate that those characteristics which are normally associated with competent development in the child of average ability are those which also account for competent development in the EMR child. Accordingly, the mildly retarded child who is attentive, independent, and task-oriented in his interaction with peers is more likely to succeed academically than the child who is distractible, dependent and passive in peer-group activities. In general, this negative cluster of behavioral styles seems to be associated with poor attitudes toward school, low self-concept and low expectancy for success.

Although this cluster was not found consistently over the course of the study, it does lend support to previous work in this area which suggests that behavior style is an important contributor to school performance and learning regardless of ability level. Since these behaviors have been shown to be variable over the school year, one implication of these results and those of other studies is that classroom management procedures might be designed for particular learning environments which may facilitate school learning by altering the rates of key behaviors.

(7) Sociodrama. During the current school year a number of rating scales and observational techniques were devised to assess the effectiveness

of the sociodrama program. Although some of these instruments were less productive than others, evidence was obtained which indicates that the program produces more discriminating and accurate social problem solving and an increase in self-initiated behavior. As in previous years, this program proved to be an exciting component of the project which was favorably responded to by both students and teachers. Also, as in previous years, several differences were noted among students in the way they responded to the program in different settings. Children in self-contained settings seem to form a cohesive group more easily and tend to appeal to authority figures in seeking problem solutions. Children in the open settings show longer "start-up" times and tend to be more difficult in managing the group process. On the other hand, children in the open settings tend to be more independent and child-oriented in the problem solving.

Although marked differences were not found in student attitudes toward self or school as the result of participation in the program, these findings may be due to an inadequate measurement and not of the sociodrama program. A continuing problem in this study has been the lack of instruments for measuring the most exciting and important benefits of this effort (e.g., increased self-esteem and creativity and motivation to learn). Nevertheless, considerable informal evidence was amassed to indicate that this program was a vital part of the project which provided a necessary and effective service to the children.

(8) Media Program. The media component proved difficult to evaluate effectively. Judging from the information that is available, however, it appeared to have positive value for children and teachers. Also, the program has been described by teachers and children as highly effective in the quantity and quality of the materials that were produced. Assignment of media personnel directly to each classroom was preferred and seemed to

be more effective in gaining teacher participation. The media technicians have provided a thorough review and analysis of the problems that were encountered in delivering this service, and have made recommendations about the operation of the program and staff development which will be of value to both decision makers and those who will provide this service in future years.

Implication

Perhaps the most general conclusion to be drawn from this study is that mildly retarded children can be successfully integrated into open classrooms at the intermediate level without necessarily lowering their academic progress or producing unfavorable attitudes or undesirable behavior. Similarly, there is every indication that this practice will not necessarily lend to academic or behavioral difficulties at the junior high level.

The major positive consequence of this practice in the present project appeared to be greater social participation, and hence the potential for a more "normal" course of social development than that which has been observed in more restricted environments. In addition, by breaking down the social barriers imposed by special class placement, a by-product of mainstreaming should be the prevention of possible negative outcomes as the result of the labeling process.

One negative consequence of maintaining EMR children in the open plan classes in this project was that they were perceived less favorably than their peers by their teachers. Each of the support services that was offered in the present project was child-oriented. Although each of these programs was judged to be effective, a consistent pattern of continuing services was not provided for the regular classroom teachers. Thus, the problem of assisting teachers in individualizing their activities for various patterns of exceptionality remains. This is not to say that the perceptions of the teachers were inaccurate, but rather that they point to a need that was unmet in the present project.

The results reported here may be tied to specific local factors and caution must be exercised in interpreting these findings. First, since the EMR children in the project came from pre-existing special classes or were identified during the course of the project, it is impossible to determine the effects of prior schooling on the variables which were studied. This was particularly the case in that all of the children were at the intermediate level. Secondly, the overall size of the sample was small throughout the project and very few children could be followed longitudinally. Also, the sample was restricted with respect to race and socioeconomic status. Similarly, the fact that the data were taken in only four settings further restricts the generality of the findings in that they may not be obtained in other types of settings or for a larger number of settings. Finally, one issue which was unresolved by these findings which must be considered in weighing the advantages and disadvantages of mainstreaming is the lower limit of ability level atwhich one could expect a mainstream program to be effective. Further, even within the EMR range, different patterns of programs and services may be necessary to maintain children of different ability levels.

Therefore, if we are to understand the impact of mainstream open classroom programs on EMR children, it will be necessary to gather common sets of data longitudinally on a large number of both retarded and average children in a variety of different settings. Although the study reported here is an initial effort and falls short of these ideal requirements, it does provide the ground-work and basic methodology for a more comprehensive analysis of this important educational issue.

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Appendix A

Sociodrama and Media Instruments

Attitude Towards School Questionnaire

(1) The stuff we do in school is ____________________.

(2) Learning out of books is ____________________.

(3) This school ____________________.

(4) The kids at school are ____________________.

(5) The principal ____________________.

(6) When I'm in school I usually ____________________.

(7) The way I feel about school is ____________________.

(8) The way teachers act toward me is ____________________.

(9) When I am doing work in school I usually feel ________________.

(10) The way the teacher teaches the class is ________________.

Self-Concept Questionnaire

(1) Many times I think I am ____________________.

(2) When I look in the mirror I ____________________.

(3) My teacher thinks I am ____________________.

(4) My friends think I ____________________.

(5) My mother thinks I ____________________.

(6) My father thinks I ____________________.

(7) The way I usually act makes me feel ____________________.

(8) Compared with other kids I ____________________.

(9) When it comes to looks I ____________________.

(10) When it comes to doing schoolwork I ____________________.

Student Social Situation Questionnaire

(1) You are taking a test and find that the student next to you is copying your answers. What would you do?

(2) You bring a dime to school. In the afternoon you can't find your dime. After looking around the room you see a dime on another student's desk. What would you do?

(3) A student in the class comes over and shoves you for no reason. What would you do?

(4) You are in school and your assignment is to work alone on some arithmetic problems. But, you don't really feel like working and would rather walk around the room and play. What would you do?

(5) You are taking a test, but you did not study for it. Your teacher is out of the room. The student next to you is writing quickly and seems to know all the answers. What would you do?

(6) It is your turn to clean up the art area after art. You see your friends getting ready to go out and play just as you are about to begin to clean up. What would you do?

(7) The class is outside playing. You see another student fall and hurt his leg. What would you do?

(8) Another student gives a wrong answer in class to a very easy question. A lot of other students start laughing at him and making fun of him. What would you do?

Qualitative Sociodrama Rating Scale

Please rate (circle) the degree to which the child manifests the following characteristics according to the following scale:

1 2 3 4 5
low high

with 1 being equal to almost no evidence of the characteristic, and 5 being equal to a very high degree of the characteristic.

1. feeling of comfort
   1 2 3 4 5
2. self-confidence
   1 2 3 4 5
3. cooperation
   1 2 3 4 5
4. acceptance of others (their ideas, feelings, performance, as a person)
   1 2 3 4 5
5. helping behavior towards others (encouragement of others, support of others)
   1 2 3 4 5
6. appropriateness of response
   1 2 3 4 5
7. involvement in performance
   1 2 3 4 5
8. involvement as a member of the group
   1 2 3 4 5
9. ability to communicate ideas during performance
   1 2 3 4 5
10. ability to communicate during group discussions
   1 2 3 4 5
11. originality
   1 2 3 4 5
12. spontaneity
   1 2 3 4 5

Sociodrama Behavioral Observation Categories

1. Aggression - verbal and physical.

2. Inappropriate motor and verbal activity - walking around, throwing things, rocking, banging on floor, excessive calling out, talking with neighbor, whining, crying, clowning, making noises.

3. Seeking and receiving information, support or assistance from teacher (in preparation for sociodrama activity).

4. Non-attending - looking around, daydreaming, sleeping, lying on floor with eyes closed.

5. Attending - listening and/or watching teacher or students.

6. Self-directed behavior - Behavior not directly related to the sociodrama activity.

7. Self-initiated verbal or motor activity during and related to sociodrama activity.

8. Teacher directed verbal or motor activity during and related to sociodrama activity. (Teacher actually tells child what to do or say or child models teacher).

Classroom Behavior Observation Categories

1. Aggression - verbal or physical towards a person or object
2. Inappropriate motor and verbal activity - walking around, throwing things, rocking, banging on desk, calling out when instructed to raise hand, talking with neighbors, whining, crying, clowning, making noises.
3. Non-attending - looking around, daydreaming, sleeping, lying on floor with eyes closed, putting head down on desk.
4. Attending - listening and/or watching teacher or students.
5. Work preparation - activities preceeding or following the execution of a task, usually of a short duration.
6. Constructive class work - self-directed, activity leading to a teacher-accepted product or goal.
7. Cooperation/participation - appropriately cooperating or participating in an on-going, teacher accepted activity, e.g., sharing a book, helping peers, accepting help from teacher or peers.
8. Positive social interaction

Teacher's Name ______________________________

Name of Media Material ________________________

1. To what extent were you involved in the:

	A great deal	Some	None
Planning	____	____	____
Production	____	____	____
Use	____	____	____
Evaluation	____	____	____

of this media?

2. How convenient was it for you to use?

Very Easy ____ Moderately easy ____ All right ____

Fairly hard ____ Hard ____

3. Could the children learn to use it easily?

Very easy ____ Moderate ease ____ All right ____

Fairly hard ____ Hard ____

4. Was it necessary for a teacher or teacher's aid to supervise its use?

Children could use it alone ____ Minimal supervision needed ____

Fair amount of supervision needed ____ Children could not use it alone__

5. Did the EMR children find this media:

	Yes	?	No
a. Attractive in appearance	____	____	____
b. Interest arousing	____	____	____
c. Stimulating intellectually	____	____	____
d. Of appropriate level of difficulty	____	____	____

6. Did non-EMR children find this media:

	Yes	?	No
a. Attractive in appearance	____	____	____
b. Interest arousing	____	____	____
c. Stimulating intellectually	____	____	____
d. Of appropriate level of difficulty	____	____	____

7. Did the EMR children learn from the media?

What was learned?

What evidence do you have that they did or did not learn?

Appendix B

Parent Questionnaire

Child's Name ____________________

School ____________________

Interviewer ____________________

Parent Questionnaire

	Yes	No
1. Do you understand the nature and purposes of the classroom your child was in this year?		
2. Have you been made aware of your child's school progress through an individual parent-teacher conference?		
3. Do you feel that your child is making progress in his classroom?		
4. Do you notice any positive difference in your child's behavior at home?		
5. Have you attended any of the parent's meetings offered by the school?		
a. If not, did you have the opportunity to attend a parent's workshop?		
b. If you did attend a parent's meeting, did you find it helpful?		

6. If you felt there has been some improvement in your child, would you list the areas for me:

7. In what other areas would you have liked to see improvement?

Appendix C

Additional Data from 1971-72 and 1972-73

TABLE 22

Mean Spring PIAT Scores Adjusted by ANCOVA for Fall Pre-test Scores

	Mean Scores				F-Ratio
	FPG	Seawell	Carrboro	Estes Hills[a]	
1971-1972	(N=12)	(N=10)	(N=10)		
Mathematics	2.74	2.51	2.70		.55
Reading Recognition	2.37	2.21	2.58		2.03
Reading Comprehension	2.14	2.59	2.45		1.08
Spelling	2.79	2.44	2.73		.88
Information	2.11	2.06	2.14		.02
Total	2.37	2.31	2.48		.94
1972-1973	(N=9)	(N=11)	(N=6)	(N=12)	
Mathematics	3.04	2.45	3.03	2.30	2.28
Reading Recognition	2.28	2.36	2.33	2.78	2.51
Reading Comprehension	2.47	2.59	2.73	2.56	.32
Spelling	2.45	2.97	3.20	2.54	1.90
Information	2.05	2.70	2.87	2.34	1.77
Total	2.31	2.60	2.82	2.34	6.30**

$^{**}p < .01$.

[a] No Estes Hills students were in the study in 1971-72.

TABLE 23

Mean Proportions of Total Observations in Each of the First Two Years for Each Category of SCAN

	Fall 1971 Mean Proportions				Spring 1972 Mean Proportions				Spring 1973 Mean Proportions				
	FPG (N=12)	Seawell (N=10)	Carrboro (N=9)	F-Ratio	FPG (N=12)	Seawell (N=10)	Carrboro (N=9)	F-Ratio	FPG (N=9)	Seawell (N=6)	Carrboro (N=11)	Estes (N=12)	F-Ratio
Constructive Self-Directed Activity	23.2	21.7	21.6	.04	16.7	25.6	27.6	2.33	32.5	47.2	22.1	36.1	3.85**
Attending/Participating	3.6	4.8	21.9	55.51**	8.5	2.8	16.2	8.99**	2.2	3.6	17.8	24.6	12.13**
Constructive Play	0.2	5.3	2.4	3.43*	0.0	0.7	0.0		0.0	0.0	0.2	0.0	
Task-Oriented Conversation	6.5	4.2	2.8	0.81	0.8	2.8	4.0	2.62	3.1	1.9	1.5	0.0	2.15
Non-Constructive Self-Directed Activity	9.1	3.0	3.2	3.63*	8.1	4.2	2.3	4.70*	2.6	1.9	0.6	0.3	2.58
Distractibility	15.2	12.2	19.7	2.45	15.2	9.1	15.2	2.93*	9.9	5.6	14.0	9.5	2.60
Passivity	7.2	10.9	10.5	0.87	20.4	11.6	16.8	3.49*	17.1	14.7	27.0	20.4	2.15
Gross Motor and Work Preparation	16.6	12.4	5.0	8.01**	18.9	31.2	8.9	11.55**	11.5	13.4	7.1	6.5	2.49
Social Interaction	12.7	20.2	6.6	6.77**	17.5	24.9	6.5	8.71**	14.2	8.7	6.5	1.5	5.09**
Dependency	2.7	2.0	3.4	0.50	2.4	2.6	2.4	.02	4.9	1.5	1.9	0.6	4.53**
Aggression	2.1	1.9	0.5	0.47	0.2	0.4	0.0		0.8	0.4	0.0	0.0	
Teacher Interaction	0.2	0.2	0.7	1.68	0.9	0.4	0.3	1.17	0.8	0.5	0.2	0.0	

* $p < .05$.
** $p < .01$.

TABLE 24

Correlations Among Variables at Spring, 1972 (First Year)

		PIAT											SCAN	
	Age	Math	Rdg. Rec.	Rdg. Comp.	Spg.	Inf.	Total	1	2	3	4	5	6	7
WISC IQ	52**	32	09	22	09	31	25	-28	-09	27	08	-02	00	-04
Age		56**	38*	57**	41*	29	55**	-07	10	-03	-19	27	35	26
PIAT														
Mathematics			59**	51**	50**	43*	76**	-05	22	05	-47**	29	16	4
Reading Recognition				71**	83**	36*	85**	17	27	07	-40*	-05	12	0
Reading Comprehension					68**	43*	79**	05	10	06	-39*	-02	32	0
Spelling						48**	87**	42*	26	-07	-32	-17	12	-0
Information							70**	26	24	03	-08	-21	04	-2
Total								25	28	01	-42*	-04	22	0
SCAN														
1. Constructive Self-Direction									11	-10	07	-56**	-11	-3
2. Attention										-18	-20	-32	09	1
3. Constructive Play											15	07	-05	-1
4. Task Oriented Conversation												-21	-15	-1
5. Non-Constructive Self-Direction													12	3
6. Distractibility														2
7. Passive Waiting														
8. Gross Motor														
9. Social Interaction														
10. Dependency														
11. Aggression														
12. Teacher Interaction														
Interview														
School Experience														
Self-Esteem														
Expressiveness														
Expectancy for Success														

* $p < .05$.
** $p < .01$.

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TABLE 24

Spring, 1972 (First Year) Testing - EMR Subjects (N=28)

SCAN										CBI			
3	4	5	6	7	8	9	10	11	12	Sch. Exp.	Self Est.	Expr.	Exp. Suc.
27	08	-02	00	-04	24	36*	-00	07	-05	-03	04	-18	16
-03	-19	27	35	26	-16	-19	-27	-02	-15	-08	31	-29	08
05	-47**	29	16	40*	-26	-18	-07	-08	26	-34	42*	-65**	16
07	-40*	-05	12	04	-19	-17	-07	05	18	-28	40*	-57**	21
06	-39*	-02	32	06	-20	-16	05	03	-01	-22	29	-24	26
-07	-32	-17	12	-03	-32	-31	-00	07	-01	-37*	38*	-51**	19
03	-08	-21	04	-25	-12	-11	23	-04	17	04	53**	-34	21
01	-42*	-04	22	05	-31	-27	01	01	15	-29	52**	-60**	23
-10	07	-56**	-11	-30	-49**	-54**	18	-34	-12	-30	00	00	-03
-18	-20	-32	09	11	-52**	-47**	07	-08	23	-17	12	-19	37*
	15	07	-05	-17	22	26	-03	-04	-12	01	-10	-02	-08
		-21	-15	-18	04	-03	05	-17	-18	10	-13	16	-11
			12	36*	21	18	-32	09	15	00	06	-20	-31
				22	-40*	-37*	-46**	12	-16	02	16	03	02
					-37*	-33	-34	-28	-02	-42*	-09	-30	14
						95**	-01	29	-12	51**	-09	17	-20
							03	34	-13	44*	-09	13	-09
								-13	38*	02	13	08	13
									00	30	16	15	14
										19	52**	-17	01
											28	54**	17
												-22	35
													21

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TABLE 25

Correlations Among Variables at Spring, 1973 (Second Year) Te

			PIAT					SCAN									
	Age	Math	Rdg. Rec.	Rdg. Comp.	Spg.	Inf.	Total	1	2	3	4	5	6	7	8	9	10
WISC IQ	42*	47**	39*	25	23	45**	44**	-13	-05		13	-17	-30	10	10	20	16
Age		44**	39*	40*	47**	39*	55**	-24	-08		30	-00	16	15	-04	09	03
PIAT																	
Mathematics			50**	46**	40*	47**	73**	-33	-31		48**	22	02	21	22	23	26
Reading Recognition				78**	76**	42*	86**	-09	01		18	-03	-27	-00	20	06	19
Reading Comprehension					71**	28	78**	04	-10		12	01	-26	-00	16	07	11
Spelling						17	78**	-08	-15		41*	10	-20	03	15	12	11
Information							63**	-07	-21		16	-16	06	15	25	03	03
Total								-16	-25		37*	01	-13	10	25	19	23
SCAN																	
1. Constructive Self-Direction									-19		-06	20	-42*	-59**	-00	-13	-27
2. Attention											-39*	-44**	-10	12	-45**	-51**	-32
3. Constructive Play																	
4. Task Oriented Conversation												20	06	-09	12	24	10
5. Non-Constructive Self-Direction													-18	-13	01	14	26
6. Distractibility														56**	-23	-28	-2
7. Passive Waiting															-38*	-44**	-1
8. Gross Motor																43*	2
9. Social Interaction																	6
10. Dependency																	
11. Aggression																	
12. Teacher Interaction																	
Interview																	
School Experience																	
Self-Esteem																	
Expressiveness																	
Expectancy for Success																	
CBI																	
Task Orientation																	
Distractibility																	
Extroversion																	
Introversion																	
Considerateness																	

* $p < .05$.
** $p < .01$.

TABLE 25

pring, 1973 (Second Year) Testing - EMR Subjects (N=33)

SCAN							Interview				CBI					
6	7	8	9	10	11	12	Sch. Exp.	Self Est.	Expr	Exp. Suc.	T.O.	Dist.	Extro.	Intro.	Con.	Host.
-30	10	10	20	16	-01	00	10	09	04	11	-27	18	01	-03	-32	23
16	15	-04	09	03	14	-09	14	07	-15	03	01	-21	-27	31	29	-01
02	21	22	23	26	10	06	35*	22	-24	18	-20	06	-09	09	01	08
-27	-00	20	06	19	12	16	11	18	-09	03	23	-37*	-09	15	41*	-35*
-26	-00	16	07	11	11	22	12	11	-21	-06	10	-39*	-09	06	31	-37*
-20	03	15	12	11	22	11	-01	02	-07	04	04	-23	-26	20	25	-25
06	15	25	03	03	-18	04	18	32	-25	-01	06	-01	-26	36*	08	08
-13	10	25	19	23	11	19	20	22	-23	04	03	-20	-25	25	28	-24
-42*	-59**	-00	-13	-27	-01	-01	-29	12	-29	-28	-08	11	-21	20	19	-02
-10	12	-45**	-51**	-32	-29	-31	07	-20	16	-13	59**	-61**	36*	-37*	29	-27
06	-09	12	24	10	08	-07	-01	17	-27	-05	-26	27	-09	08	-13	01
-18	-13	01	14	26	65**	-06	-05	06	-12	11	-64**	53**	-16	11	-57**	31
	56**	-23	-28	-29	-25	-29	-01	-19	-06	11	05	-13	06	-05	13	-06
		-38*	-44**	-17	-26	-43*	06	-10	02	00	15	-23	-14	06	20	-12
			43*	25	18	42	18	20	17	25	-15	34*	-03	12	-14	25
				62**	34*	72**	05	10	10	18	-46**	49**	04	03	-19	31
					53**	41	29	15	29	41*	-30	31	-06	07	01	08
						10	23	15	00	12	-36*	30	-14	05	-16	21
							-01	04	10	11	-20	21	13	00	02	08
								43**	25	30	28	-16	25	-24	23	-11
									03	08	12	11	06	-03	00	06
										44**	04	08	31	-29	-05	16
											00	07	17	-15	-11	27
												-80**	-24	-18	70**	-45**
													-20	15	-74**	65**
														-83**	-08	01
															22	-05
																-74**

Appendix D

Topics Covered During Sociodrama Sessions

Deeper Project
Sociodrama Program

The weekly sessions with each group have included the following material:

1. "Pass the Object"--a simple pantomime activity which helps to develop imagination, initiative, attention to detailed manipulation of the hands (without props), and sense awareness of touch and taste.

2. "Moving Through Obstacles"--pantomime activity which emphasizes communication, expression of whole body and focuses upon awareness of the physical environment in relation to the individual child.

3. "Where Am I"--(two or three sessions) pantomime activity which focuses upon choosing appropriate actions and behavior in a variety of places: living room, kitchen, supermarket, playground, classroom, etc.

4. Assuming roles of other people (four sessions)
   a. very old people
   b. very young people (pre-school children)
   Exploration through discussion and pantomime of the physical and emotional characteristics of these two age groups and ways in which these factors might influence behavior. Exploration of inappropriate and appropriate interaction of each of these age groups with school-age children.

5. Dialogues between old people and children to experience communication in a variey of situations: strangers, grandparents and grandchildren, visitors to the house, neighbors.

6. Arguments with siblings--(two sessions) exploration through discussion and sociodramatizations of a variety of situations which cause sibling conflict--
   household responsibilities
   television use
   sharing of toys, food
   privileges
   trying out alternative solutions to these conflict areas.

7. Christmas party, pantomime games

8. Fighting at school--through discussion, an exploration of some situations in which disagreement leads to fighting (both physically and verbally) in the classroom, on the playground, in the lunchroom; ~~and~~ through sociodrama the playing out of these situations with alternative solutions.

9. Honesty - from standpoint of problem-solving:
   accidentally breaking something
   finding money on classroom floor
   receiving too much change at grocery store
   telling "white lies"

10. Peer Group Interactions
    new child in neighborhood
    new child at school - problems encountered when the child is "different"

11. Friendship - exploring what it means to be a friend and to have one. The values and responsibilities.
    Problems:
    a friend does not have the money to attend a movie with the group
    talking behind the back of a friend
    a friend must baby sit at home rather than go out with the group
    a party is planned and the friend gets sick and cannot attend it
    a friend has an argument with his parents and becomes very depressed
    a friend gets into trouble at school

12. Preparation for mainstreaming EMR students into regular classrooms and/or transfer to the junior high schools:
    This part of the program was developed and implemented with a UNC Psychology intern.
    Discussion of the changes that will take place i.e. room, teacher, peer group, routines, rules, etc.
    Role-playing based upon one focal question:
    How can the student behave and function appropriately so that the new peer group will react positively to him.
    Dialogues on the first day of school in the new classroom.
    Interaction between the teacher and the group.
    Dialogues between 2 students in the classroom, on the playground, in the lunchroom.
    Dialogues focusing upon situations which might occur at the junior high school when teacher supervision is not available:
    skipping school
    smoking
    use of drugs
    Exploring the necessity for each student to make choices for himself.

Appendix E

Summary and Conclusions for 1971-72 and 1972-73

The summary and conclusion sections from the final report for each previous project year are included here.

Findings for 1971-72. The summary and conclusions from the final report of 1971-72 were as follows:

1. The subjects in the three settings were within the general age and general intelligence range of the project and were well matched with respect to these variables as well as cognitive style and locus of control orientation. At the same time, the sample was highly restricted with respect to race and socioeconomic status. These factors together with a small n and the absence of a normal IQ control group will limit the generality of the findings. Accordingly, in the next year of the project, efforts should be made to increase the number of children involved and to identify a sample of white EMR children in each school. Also, the generality of the data may be enhanced by securing normative data in each school based on a random sample of normal children.

2. The overall instructional level for the sample in the fall was beginning second grade. The three groups were found to differ in fall achievement level and this effect was attributed to CA variance. The average improvement in total achievement was .42 years. All three EMR groups showed significant gains in total achievement and on at least two of the five subtests. However, the relative change in achievement was the same for all three groups. Therefore, one must conclude that the three alternative delivery systems did not have differential impact on general academic achievement. On the other hand, since lasting gains in achievement are cumulative in nature, the three groups may not

be expected to show a greater separation on this dimension over a period of eight to nine months.

3. The analysis of classroom behavior patterns lends support to the hypothesis that the three different instructional environments generate characteristically different patterns of behavior in EMR children. The task-oriented and social behavior of EMR children in the two open classrooms were similar, but very different from that observed in the self-contained class. In general, the open classrooms facilitated greater social interaction on the part of EMR children, but at the price of less productive, task-oriented academic behavior (although the achievement test gains were not dissimilar). The major dimensions which seemed to separate the open classrooms and the self-contained units were the degree of structure provided for student activities and teacher expectations for performance. Similarly, qualitative differences in behavior between the two open classrooms seem to be due to relative differences on these two dimensions.

In addition, evidence was found to support the conclusion that rather subtle changes in the classroom environment produce corresponding and predictable changes in student behavior. These findings suggest that intervention aimed at altering classroom process may be an effective means for facilitating greater productivity in the open environment.

4. The analysis of attitudes toward school experience indicated that the EMR children at Carrboro evaluated their experience in the spring less favorably than in the fall, whereas no charge in attitudes was observed at FPG or Seawell. It was impossible to determine whether these effects were due to the children's experience in the three settings or whether they merely reflected differential responses to the interview

technique. Frequently, the children expressed the view that school should be the way they find it and that their difficulties were due to personal failure rather than to inadequacies of the system.

5. The comparison of the fall and spring Self-Esteem scores showed an increase for FPG with no change for Seawell or Carrboro. The Carrboro group showed an increase in their Expectancy for Success score; however, no change was observed at FPG and Seawell. These findings may reflect differential changes in self-evaluation due, in part, to the socio-drama program.

6. The effects of the socio-drama program were evaluated with the interview data reported above, a narrative description of the process in each group, and video tape observations collected at FPG. The data suggest that the program had a positive effect on self evaluations in two groups. The program seemed to be more successful and had greater impact at FPG and Carrboro than in the other group. This differential effect was clearly due to the characteristics of the classroom environments in terms of the kind of structure present and the availability of non-EMR students to stimulate group process.

7. The delivery of service by the media technicians was highly effective as evaluated by the quantity and quality of materials produced, and by expressed teacher satisfaction with the service. An external evaluator concluded that this service was vital to the total project and was perhaps effective beyond what one could expect given the amount of funds spent for the service.

In 1972-73 the summary and conclusions were:

1. The number of subjects in the study was slightly higher this year than it was last year. The cumulative number of subjects that will

have been in the study for two consecutive years will be approximately 40 children. The sample, however, continued to be restricted as to race and socioeconomic level. Given the nature of the community and in view of the thorough search made for additional EMR children this past year, it seems doubtful that the composition of the sample can be changed substantially during the 1973-74 school year.

2. The children that were in the study this year were found to be similar to those in the study last year in age and general intelligence. The children in each of the four schools this year were also quite comparable in age and intelligence.

3. The overall achievement level for the sample in the fall was mid-second grade. This initial level was similar to that for the previous year because several older children left the sample and several younger children were added to it. Students in the four schools were well matched on academic achievement at the beginning of the project.

Students at Carrboro and Seawell schools improved significantly over the year; hwoever, students at FPG and Estes Hills failed to show marked gains in total achievement. Children in the self-contained classroom at Carrboro Elementary School showed the greatest average gain in total achievement compared to the other groups.

One factor which may explain the limited achievement gain over the present year compared to that observed the previous year may be the length of time taken to administer the PIAT pre-test. In any event, the number of children with cumulative experience in the program is quite small and, therefore, conclusions must remain tentative at this time. For example, when the academic achievement of those children who have been in the program for two years was compared, students in FPG, Seawell and Carrboro displayed significant gains in total achievement with those students at FPG showing relatively greater gains than those at Carrboro.

Thus, although the number of children involved in this analysis is small, the longitudinal results do not agree completely with the data taken from this year alone.

4. Few differences in student attitudes were found among the four groups. However, students at FPG showed increases in self-esteem as measured by the Structured Interview Technique. Children in the self-contained classrooms seemed to show higher expectancy for success than those in the open classrooms, although this effect was not well demonstrated. It is not clear whether the settings and socio-drama programs were sufficiently potent to facilitate changes in student attitudes or whether the Structured Interview failed to measure the attitudes with sufficient discrimination.

5. The measurement of parent attitudes by the Home Behavior Inventory proved to be quite inadequate. Several sets of parents were uncooperative and it is doubtful whether those parents that did respond either fully understood what they were to do or rated their children in a meaningful fashion.

6. Teacher ratings of their EMR children on the Classroom Behavior Inventory differed considerably among the four schools. Estes Hills children were rated more favorably than the other three groups in the fall. In the spring, the CBI ratings for the four schools were more similar. However, students in the open classrooms were perceived as more distractible and less task-oriented than students in self-contained classrooms. These findings suggest that teachers in the open classrooms may have evaluated the behavior of EMR children in relation to that shown by non-EMR children, whereas teachers in the special classes may have

considered the behavior of their EMR children from a frame of reference more influenced by their expectations or desires.

7. The analysis of student behavior patterns by time sampling procedures indicated significant differences among the four groups in the relative frequency of task-relevant, task-irrelevant, and equivalent and cooperative behavior. At the same time, differences in behavior patterns were not as clearly associated with the nature of the setting as that found the previous year. EMR students in open classrooms showed higher frequencies of independent behavior than did those in special education classes. Students in the special class at Estes Hills displayed more task-relevant behavior than did those at FPG or Carrboro, and showed less task-irrelevant behavior than students at FPG and Seawell. Students in the special class at Carrboro showed a higher frequency of cooperative behavior than did those at FPG or Seawell. EMR students in the two open classroom settings were found to interact with non-EMR students more frequently than with other EMR students. The analysis of setting data on classroom activities suggests that it is possible to distinguish three different environments among the four groups and these appear to be consistent with those proposed for the study.

8. Comparisons on each of the SCAN and CBI dimensions were made between EMR children and a group of non-EMR students who were matched by school, race, sex, and either grade or approximate age. While EMR and non-EMR children were found to be different in age, IQ and Iowa vocabulary scores, there were no differences among the four schools on each of these variables for either subject group.

EMR children in the open classrooms were rated by their teachers as similar to the non-EMR children on all CBI categories except task orientation where the EMR children in self-contained special education classrooms, however, were described more favorably than were non-EMR children on all dimensions except introversion.

Although EMR children displayed more dependent behavior than non-EMR children, few significant differences were found between EMR and non-EMR children on the SCAN dimensions. EMR children at Seawell showed higher frequencies of independent behavior than non-EMR children there; however, this relationship was reversed at FPG and Estes Hills. EMR children at Carrboro were much less independent than non-EMR children in self-contained classrooms in the same school.

9. The socio-drama program continued to obtain a favorable response from both students and teachers. As was the case the previous year, the program was started more easily and progressed in a more stable, predictable fashion in the self-contained groups than in the open classroom groups. It appeared to be more difficult to attain a workable group structure for socio-drama where the students did not otherwise work together as a group and had less structure for their activities in the classroom. On the other hand, children who seem to benefit most from the program in the open classroom settings seemed to show greater progress in their ability to deal with the socio-drama material than did those in the self-contained classrooms.

Appendix F

Dissemination

Dissemination

DEEPER LOG - News Release - September, October, November, January February to principals, teachers, school board members, private school (St.Thomas More), programs for the handicapped with State Title III

State Sponsored Title III Conference in Raleigh
Media display, socio-drama demonstration and project film.
Report on research findings by Dr. Clifford.

Local ARC Meeting - Talk and film of project
Jessie Gouger and Dr. Hanes

Media Workshop - Title III teachers in Chapel Hill, other system wide teachers, and Title III and Title VI teachers outside of Chapel Hill area

Report to Local School Board - Socio-drama demonstration film,
Report on research findings by Jessie Gouger and Dr. Rivers.

News Releases to Chapel Hill paper and Durham papers

Unpublished Papers

- Greenberg, S. & McKinney, J.D. An annotated bibliography of open classroom literature. Unpublished paper, 1972
- McKinney, J.D., & Clifford, M. Interim report: The selection of test instruments for the evaluation of exemplary EMR programs. Unpublished manuscript, 1971.
- McKinney, J.D., & Clifford, M. Technical report #3: Analysis of pretest data for the evaluation of exemplary programs for the educable retarded, 1972.
- McKinney, J.D. & Clifford, M. Evaluation of exemplary programs for the educable retarded, ESEA, Title III: Final report, 1971-1972. Unpublished manuscript, 1972.
- Clifford, M., & McKinney, J.D. Evaluation of exemplary programs for the educable retarded, ESEA Title III: Interim report for 1972-73 budget year. Unpublished manuscript, 1973.

Papers Presented to Professional Meetings

McKinney, J.D.
Behavior patterns of mildly retarded children in open classrooms. Presented at the meeting of the Society for Research in Child Development in Philadelphia, Pennsylvania, March, 1973.

McKinney, J.D.
The development and evaluation of open classroom programs, and
Clifford, M.
Assessment of student behavior patterns in open classrooms. Presented as parts of a symposium prepared by Schol Psychology Department, School of Education, University of North Carolina at Chapel Hillat meetings of the Southeastern Psychological Association in New Orleans, Louisiana, April, 1973.

Clifford, M.
Relative potency of teacher attitudes toward black and retarded children. Presented at the meetings of the Southeastern Psychological Association, New Orleans, Louisiana, April, 1973.

Appendix G

Media Productions

AUDIOTAPES
- reproduction of 360 cassettes for elementary reading services
- 1972-73 Management Review edited for this year's review.

SLIDE TAPES
- Pod 3 Book of Short Stories (produced as book last year)
- Christmas presentation (with slides from last year)
- Materials Design (or mini-catalogue, for Title III Conference)

VIDEOTAPES *
- at request--for sociodramatist, LD teachers, project teachers, workshops

* (We planned to use videotape as a principal medium of dissemination, and to this end resurrected the school system's equipment. This equipment is, however, pre-standard, and for this reason the tapes produced with it cannot very well be sent out for general viewing.)

16MM Film
- completion of film from footage shot last year: 10 minutes, color with sound study of Joan Tetel's sociodrama work with project students at Estes Hills. Available from Joan Tetel or Jessie Gouger for viewing
- film made in cooperation with Title III Project MELD-completion date August, 1974-on learning problems.

TRANSPARENCIES
- designing materials systematically
- overall school system objectives

BROCHURE
- for Title III conference and other uses

WORKSHOPS
- one on Classroom Management and one on Materials (see Deeper Look Vol. III NO. 3 for full description) prepared for Learning Problems (MELD-DEEPER cooperative) in-service seminar
- media services provided to all other sessions of this seminar

MULTI-MEDIA
- Title III Conference (Raleigh - March, 1974) presentation
- school board presentation
- Title III Management Review (April, 1974)

NEWSLETTERS
(i.e. Deeper Look, Vol. III, Nos. 1-4)
- refer to your files, please.

PHOTOGRAPHS
(black and white)
- for puzzles, games, other activities (see MATERIALS item below)
- documentary - for scrapbooks, brochure, poster

POSTER

- preparation, a mini-catalogue of ideas, for general dissemination

EVALUATIVE DESIGN

(or Accountable Materials)
- pre-testing
- writing objectives
- designing materials to fulfill objectives*
- working with students using materials
- re-designing, replication
- post-testing

SLIDES AND 8MM FILM

- field trips (Nunn and Hargraves classes)
- Pod 3 Book of Short Stories
- systems approach to materials design
- student art work in conjunction with field trip

GAMES AND ACTIVITIES

- Maps - Various
  - original, simplified, local maps with "legends" to be filled in
  - heightened (i.e. "doctored") local and regional maps
  - "imaginary island" maps, large and small
  - Denoyer-Geppert Map Skills Chart and other materials
- Transparencies
  - handwriting skills
- Design and/or Laminating of...
  - calendars
  - handwriting practice sheets
- Signs, Nametags, Logos, Drawings, etc. - at request
- Math Games, Spelling Games (utilizing photographs reported above)
  - cubes or dice (money recognition skills)
  - dominoes (money recognition skills)
  - puzzles (money recognition skills)
  - cards (money recognition skills)
  - feelie bag (money recognition skills)
  - "time on your hands" (time)
  - dice (digits, place)
  - board, language master cards (digits, places)
  - boards (for spelling, keyed to 6th grade speller)
- Field Trips
- Production Assistance with Teacher Made Materials (and fulfilling of other teacher requests)

ORDERING AND PURCHASING

- films, slides (viewed and returned)
- books, materials (placed in classrooms or in Media Center on sign-out basis), i.e., commercially packaged "soft-ware" determined as appropriate in fulfilling project objectives.

MAINTENANCE AND SIGN-OUT OF EQUIPMENT AND MATERIALS

- as required; operation of Media Center (Lincoln School Central Office) to function as ESEA.Title III production, information, and resource area)